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Precautions

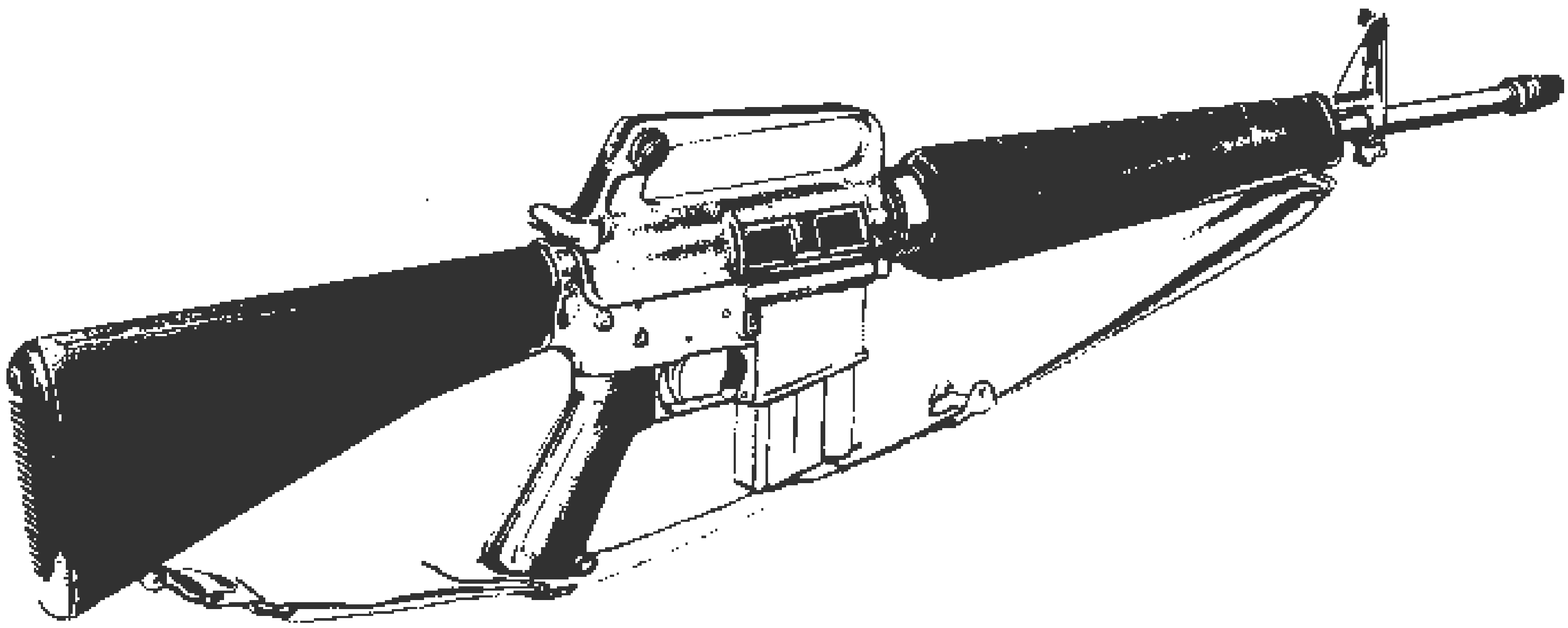
1. Most vapors of cleaning agents are toxic if inhaled in large quantities for extended periods. Use toxic cleaning agents sparingly and only in well ventilated areas.

2. Wash hands thoroughly with soap and water after using cleaning agents. A lanolin base cream may be used after washing.

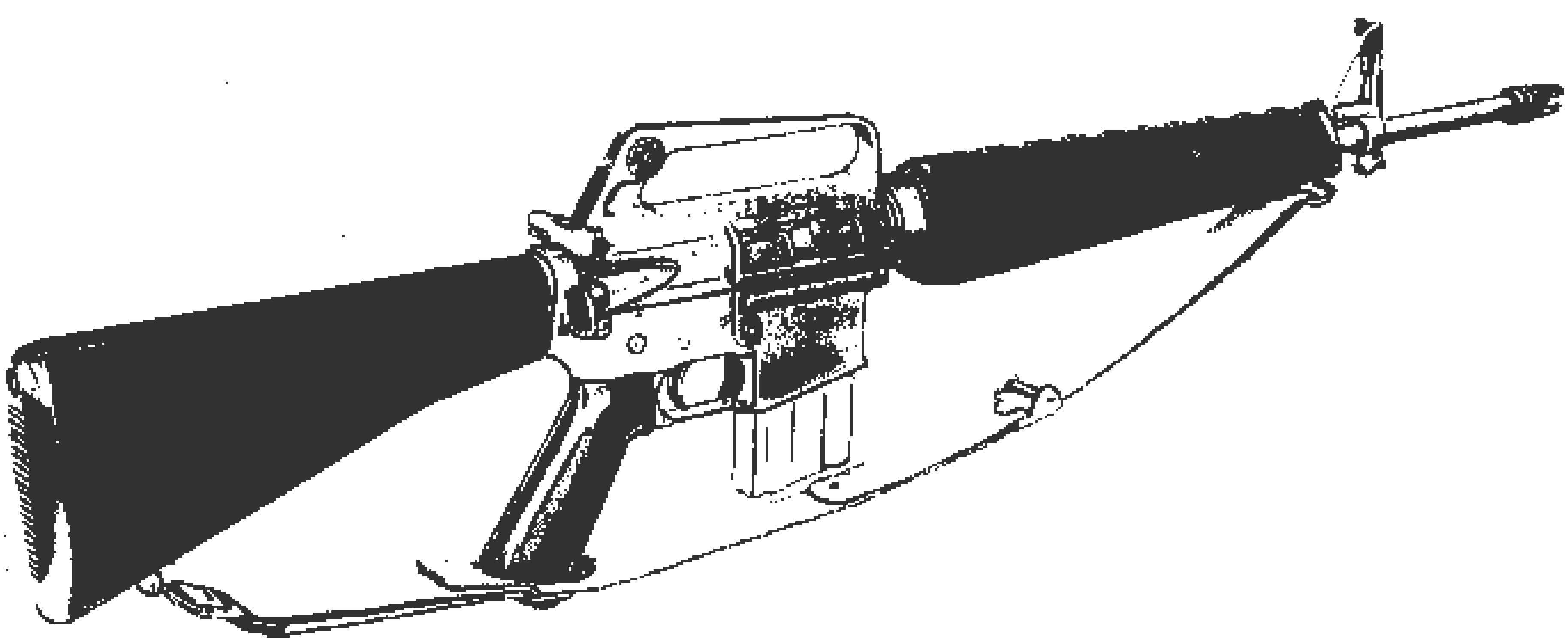
3. Only the cleaning agents in this manual and a vapor degreaser are authorized for cleaning. Before using a vapor degreaser, the following parts or components shall be removed:

STOCK ASSY, MOLDED: W/swivel	(27, Fig. 9-2)
GRIP, PISTOL:	(21, Fig. 9-2)
GUARD, HAND, GUN: R-H, and L-H.	(1 & 2, Fig. 9-3)
SWIVEL, FRONT:	(10, Fig. 9-3)

When removing stock assembly and pistol grip care should be taken to prevent loss of detents and springs. (22, 23, 33 and 34, Fig. 9-3)



RIFLE, 5.56 MM - M16



RIFLE, 5.56 MM - XM16E1

ORD F9071

Figure 1-1. Rifle, 5.56-MM, M16 and XM16E1.

CHAPTER I
INTRODUCTION

SECTION 1
PURPOSE AND SCOPE

1-1. GENERAL.

1-2. This manual is published for the information and guidance of personnel responsible for Operation, Organizational, and Direct and General Support Maintenance of 5.56-mm rifles M16 and XM16E1. Pertinent information includes tabulated data, accessories and special tools, preparation for use, storage and shipment, operating instructions, preventive maintenance and lubrication procedures, ammunition, instructions on demolition, inspections, procedures on disassembly, cleaning, repair and assembly. Also included are basic issue items, tools and replacement parts.

> NOTE
>
> THE OPERATOR (USER) PORTION OF THIS MANUAL IS CHAPTER I THROUGH VI.

1-3. SUGGESTIONS AND RECOMMENDATIONS.

1-4. U.S. ARMY. The direct reporting of errors, omissions and recommendations for improving this equipment manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form will be completed in triplicate, using pencil, pen or typewriter, and forwarded by the individual using the manual. The original and one copy will be forwarded direct to:

Commanding General
Headquarters
U. S. Army Weapons Command
ATTN: AMSWE-SMM-P
Rock Island Arsenal
Rock Island, Illinois 61202

One information copy will be provided to the individual's immediate supervisor (e.g. officer, noncommissioned officer, supervisor, etc.).

1-5. U.S. AIR FORCE. Publication deficiencies will be reported on AFTO Form 22's and processed in accordance with T.O. 00-5-1.

1-6. U.S. NAVY. Publication deficiencies will be reported on Publication Change Guide Form PRNC-NWP-5602-5 (Rev. 4-60).

SECTION 2
DESCRIPTION

1-7. DESCRIPTION.

1-8. Only XM16E1 Rifle has a forward assist assembly with associated parts. Otherwise the M16 has the same components and parts.

Note

The instructions in this manual when different for each model will be noted accordingly.

1-9. The rifles (figure 1-1) are light-weight, air-cooled, gas-operated, magazine-fed, shoulder or hip guns and are designed for either full automatic or semiautomatic fire. The rifles accommodate a 20-round magazine.

1-10. Barrel is air-cooled and is provided with a flash suppressor, and may serve as a grenade launcher and a front support for the bayonet. The barrel is surrounded by a heat resisting fibre glass material, which serves as a hand guard and forearm. The hand guard has a heat resisting inner shield. The front and rear sights are adjustable.

1-11. Butt stock is made of a durable synthetic material of high impact strength.

1-12. Rifles are easily opened by pressing the take down pin exposing the working parts, making it convenient for cleaning and inspection.

1-13. The forward assist assembly, when actuated, forces the bolt forward to the locked position (XM16E1).

1-14. Bolt locking action is one of the features of the rifles. The bolt contains locking lugs. Lugs on the barrel extension engage the bolt lugs and lock the bolt firmly in the barrel extension with or without cartridge in chamber. Thus the full force of the explosion of the cartridge is absorbed by the barrel extension and bolt. Receiver is made of light-weight aluminum alloys. The safety, durability and function of the rifles is in no way reduced and the portability and logistical values greatly increased, particularly when air transport is used.

SECTION 3
TABULATED DATA

1-15. TABULATED DATA.

1-16. Tabulated data pertaining to the general characteristics and performances are listed as follows:

Weight	
M16 Rifle without magazine and sling	6.3 lb
XM16E1 Rifle without magazine and sling	6.5 lb
Sling M1	.4 lb
Empty aluminum magazine	.2 lb
Loaded aluminum magazine	.7 lb
M16 Rifle with sling and loaded magazine	7.4 lb
XM16E1 Rifle with sling and loaded magazine	7.6 lb
Telescope	.9 lb
Bipod M3	.6 lb
Bipod case	.2 lb
Bayonet-Knife M7	.6 lb
Scabbard M8A1	.3 lb
Length	
Rifle with flash suppressor	39 in.
Rifle with bayonet-knife	44.25 in.
Barrel	20 in.
Barrel with flash suppressor	21 in.
Mechanical Features	
Rifling, R.H. 6 grooves - 1 turn in 12"	
Bore maximum	.220 in.
Groove maximum	.2245 in.
Sight radius	19.75 in.

Trigger pull	
Maximum	8.5 lbs.
Minimum	5.0 lbs.
Method of operation	Gas
Type of mechanism	Rotating bolt
Method of feeding - magazine	20 rds
Cooling	Air
Ammunition	
Caliber	5.56-mm
Type	Ball and tracer
Firing Characteristics	
Muzzle velocity (approximate)	3250 fps
Muzzle energy	1300 ft - lb
Chamber-pressure	52,000 psi
Cyclic rate of fire	700/800 rds. per min.
Maximum rate of fire	
Semiautomatic	45/65 rds. per min
Automatic	150/200 rds. per min
Sustained rate of fire	12/15 rds. per min
Maximum range	2653 meters
Maximum effective range	460 meters

SECTION 4

ACCESSORIES AND SPECIAL TOOLS

1-17. ACCESSORIES.

1-18. Accessories are listed in Table 1-1. Items listed with (USAF) are applicable for Air Force only.

1-19. SPECIAL TOOLS.

1-20. Special tools tabulated in table 1-2 are listed in chapter IX of this manual. This tabulation contains only those tools utilized in performing the operations described in this manual.

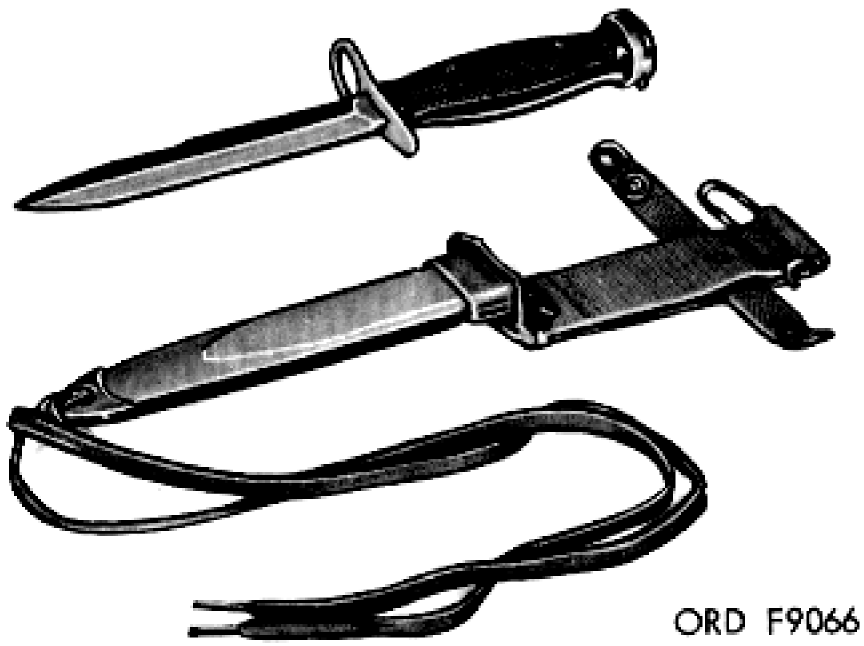
Table 1-1. Accessories

Item	Identifying Number	Figure Number
Bayonet-Knife M7	11010077	1-2
Bipod, Rifle, XM3	62122	1-3
Case, Bipod	62309	1-4
Case, Scope (USAF,	63136	-NI
Grease, Rifle, 5cc cntr.	5621059	1-5
Scabbard, Bayonet-Knife M8A1	7268112	1-2
Scope, Assembly (USAF)	62142	-NI
Scope, Mount Assembly (USAF)	62215	-NI

-NI NOT ILLUSTRATED
(USAF) UNITED STATES AIR FORCE

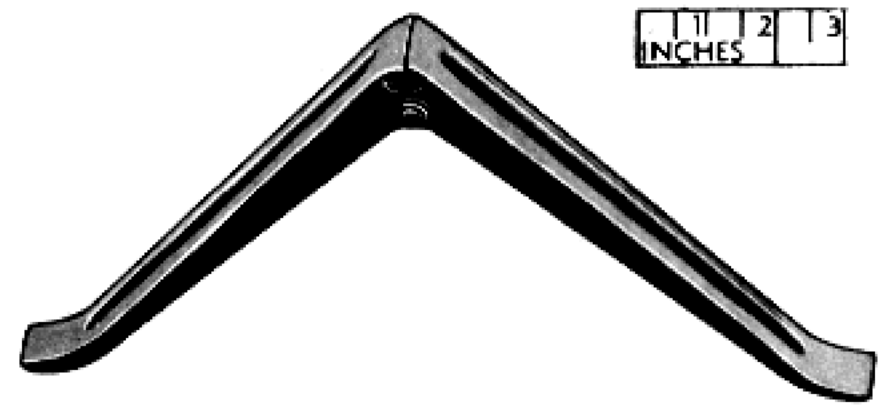
Table 1-2. Special Tools

Item	Identifying Number	References Fig.	Use
Rod, cleaning, small arms, M11	11010020	1-6 3-6	Used with cleaning brush to clean barrel bore.
Brush, cleaning, small arms	11010021	1-7 3-6	To clean barrel bore.
Wrench, combination, barrel nut and flash suppressor	11010033	1-8 8-4	To remove and install barrel nut and slip ring.
Jaw, barrel remover	11010032	1-9 8-4	Used with adapter to remove and install barrel nut and slip ring.
Gage, firing pin protrusion	7799735	1-10 8-6	To check firing pin protrusion.
Gage, headspace (field type)	7799734	1-11 8-7	To gage headspace.



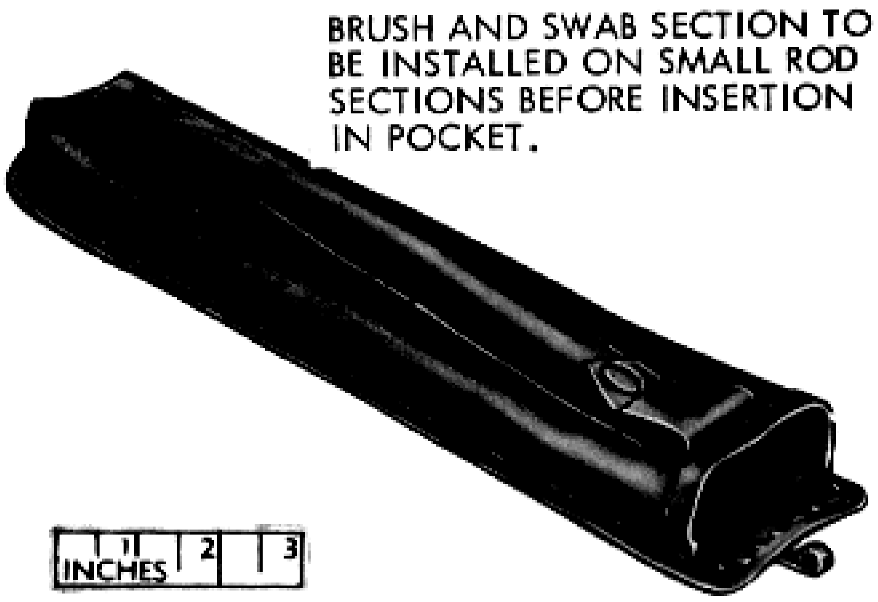
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Figure 1-2. Bayonet-Knife M7 and Bayonet-Knife Scabbard M8A1 (Fig.3-3)



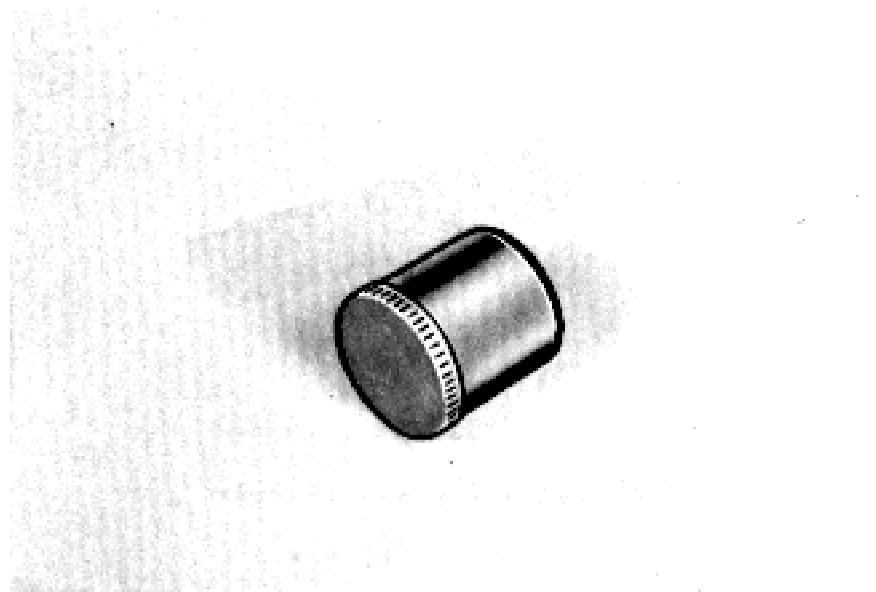
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Figure 1-3. Rifle Bipod, XM3 (Fig.3-3)



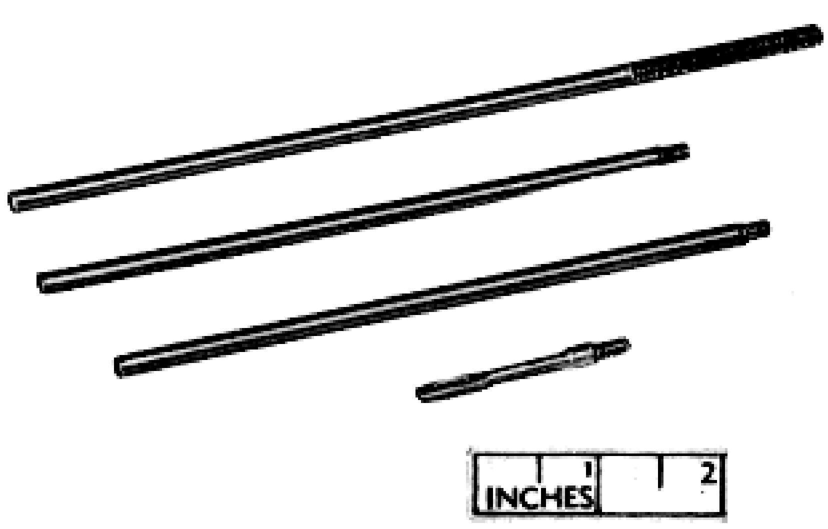
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Figure 1-4. Bipod Case - 62309



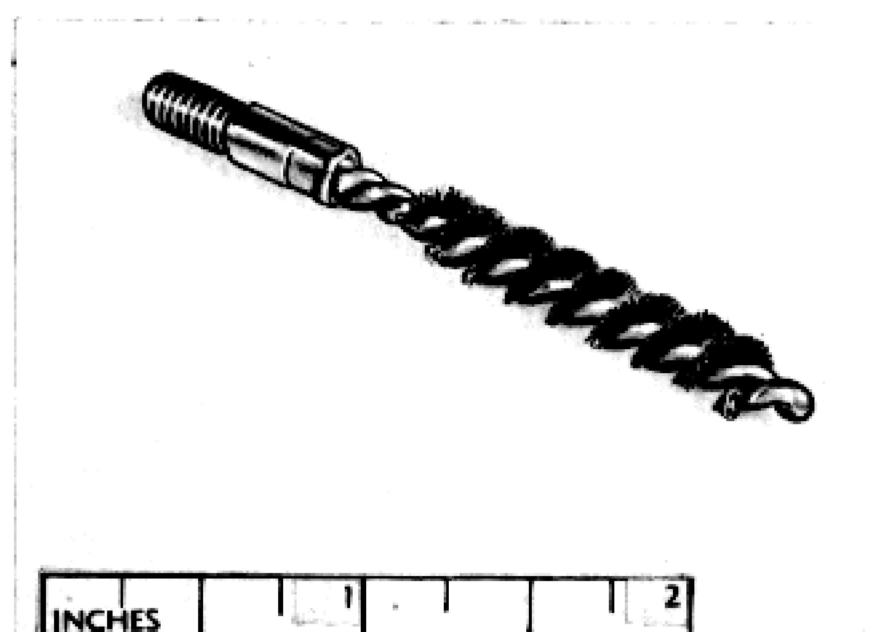
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Figure 1-5. Rifle Grease - 5 cc Container - 5621059



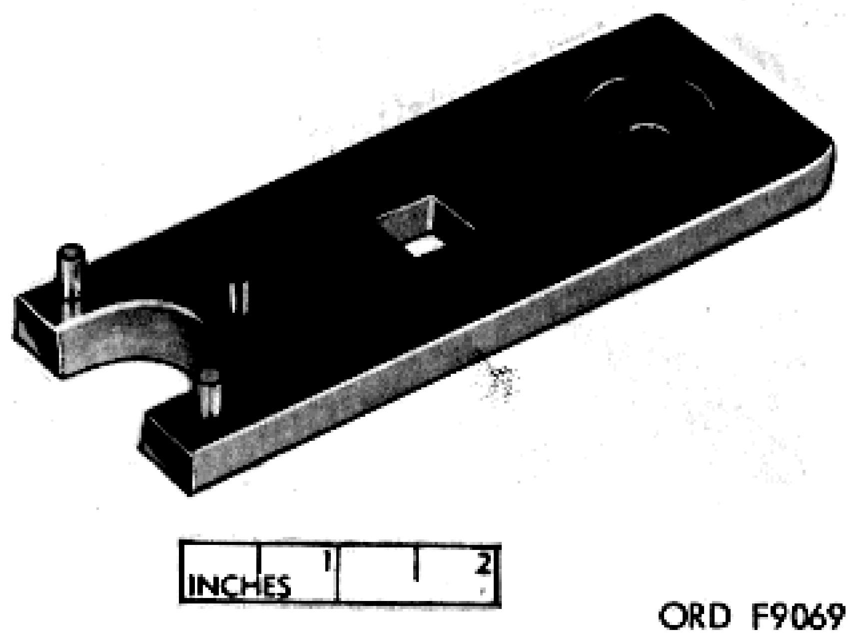
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Figure 1-6. Small Arms Cleaning Rod - 11010020 (Fig. 3-6)



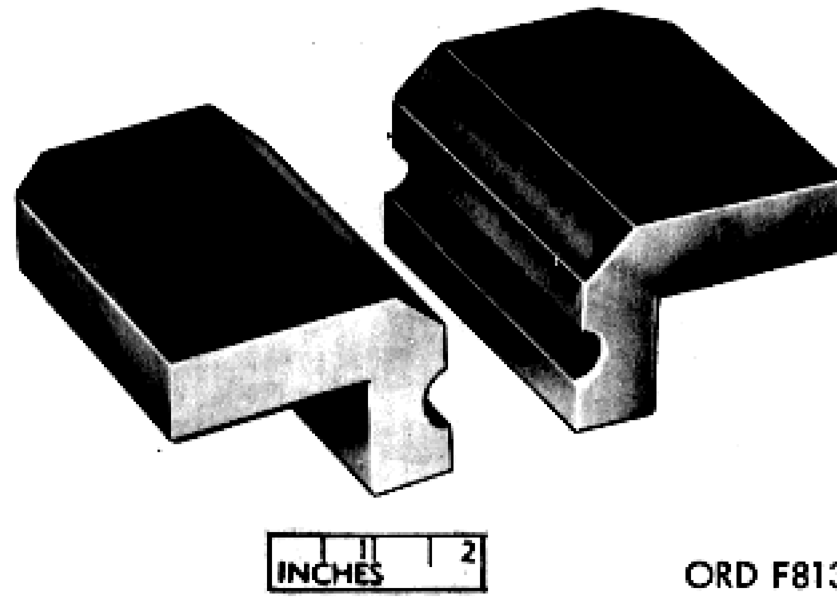
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Figure 1-7. Small Arms Cleaning Brush - 11010021 (Fig. 3-6)



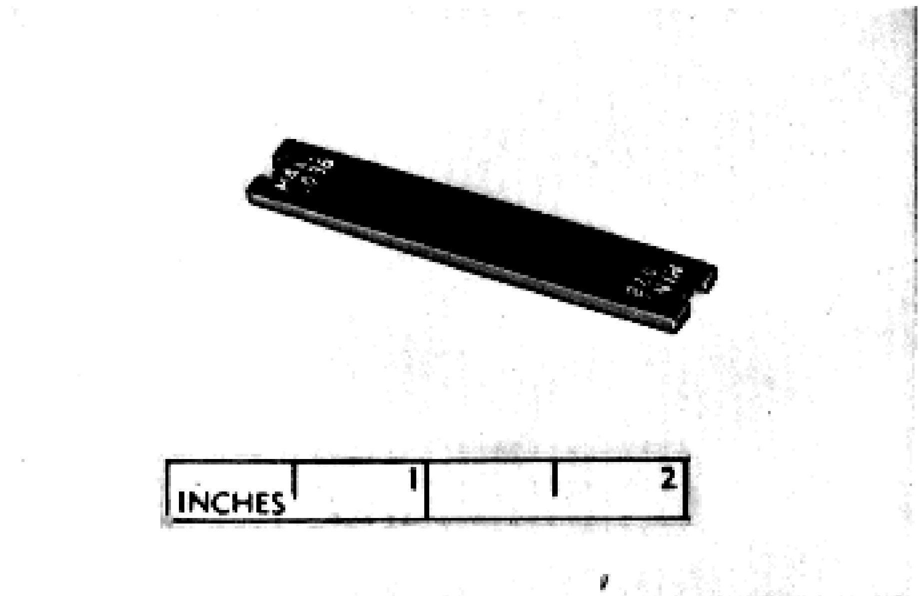
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Figure 1-8. Combination Wrench - 11010033 (Fig. 8-4, Pages 1 and 3)



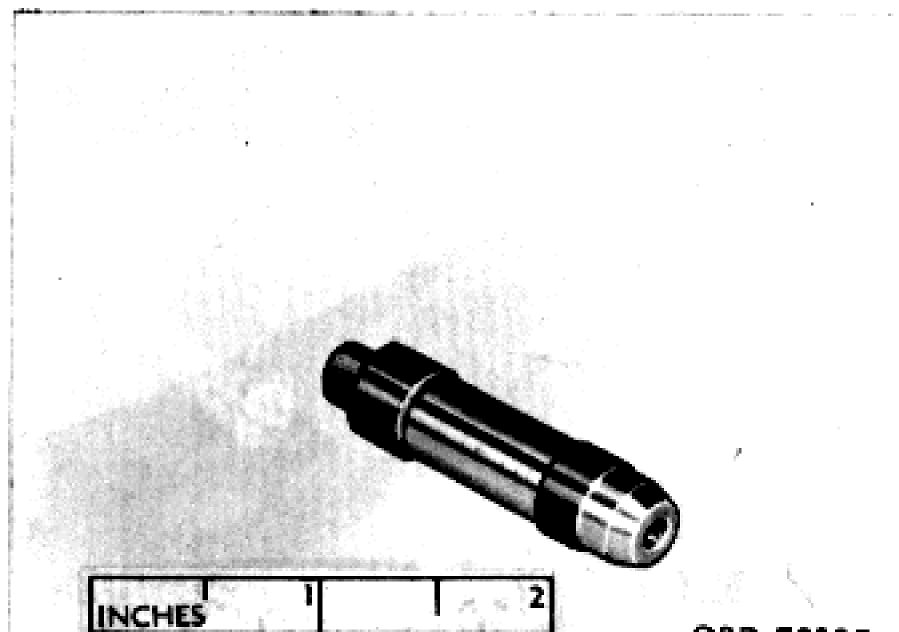
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Figure 1-9. Barrel Remover Jaws - 11010032 (Fig. 8-4, Pages 1 and 3)



ORD F9070

Figure 1-10. Firing Pin Protrusion Gage - 7799735 (Fig. 8-6)



ORD F8135

Figure 1-11. Headspace Gage (Field Type) - 7799734 (Fig. 8-7)

CHAPTER II
PREPARATION FOR USE, STORAGE, AND SHIPMENT

SECTION 1
PREPARATION FOR USE

2-1. GENERAL.

2-2. When a new or reconditioned rifle is received it is the responsibility of the officer in charge to determine whether the materiel has been properly prepared for service and to be sure it is in condition to perform its function.

2-3. All basic issue items, replacement parts, tools, and equipment will be checked with listing in chapter IX.

2-4. A record will be made of all missing parts, tools, and equipment and of any malfunctions. Corrective action will be initiated as quickly as possible.

SECTION 2
PREPARATION FOR STORAGE AND SHIPMENT

2-5. STORAGE.

2-6. Rifles to be stored are to be cleaned, dried, preserved, packaged and marked as indicated in paragraphs 2-7 through 2-13 below.

2-7. CLEANING. Remove dust, dirt, grit or other foreign matter from surfaces of the weapon, making certain all components are clean.

2-8. DRYING. Component parts must be thoroughly dried before preserving and packing.

2-9. PRESERVATION AND PACKAGING. Rifles must be preserved with lubricating oil, as indicated in section 3 of chapter VIII, and will be packaged in suitable containers or boxes.

2-10. MARKING. Marking instructions will be in accordance with applicable marking data.

2-11. SHIPMENT.

2-12. RESPONSIBILITY. When shipping the rifle, the officer-in-charge of preparing the shipment will be responsible for furnishing the materiel properly processed for shipment.

2-13. PREPARATION FOR SHIPMENT. Rifles removed from storage for shipment need not be reprocessed unless inspection reveals them to be inadequately preserved.

CHAPTER III
OPERATION INSTRUCTIONS

3-1. SAFETY PROCEDURE.

3-2. Clear the rifle by performing operation in figure 3-1.

3-3. CONTROLS.

3-4. Refer to figure 3-2 for controls and operation of controls.

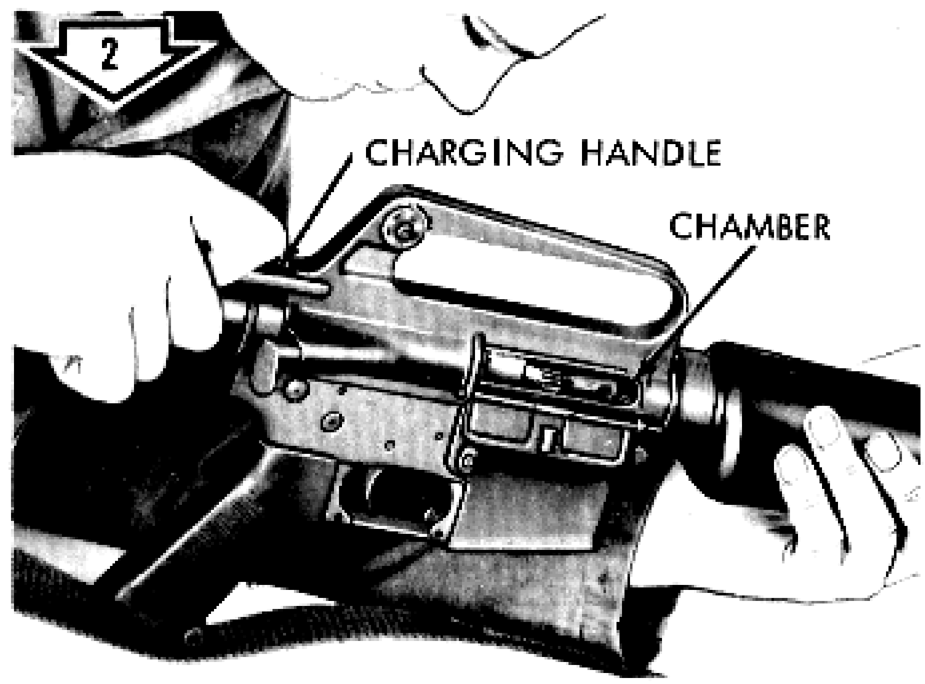
Note

The number in the upper left-hand corner of illustration gives the sequence of operation or disassembly. 1

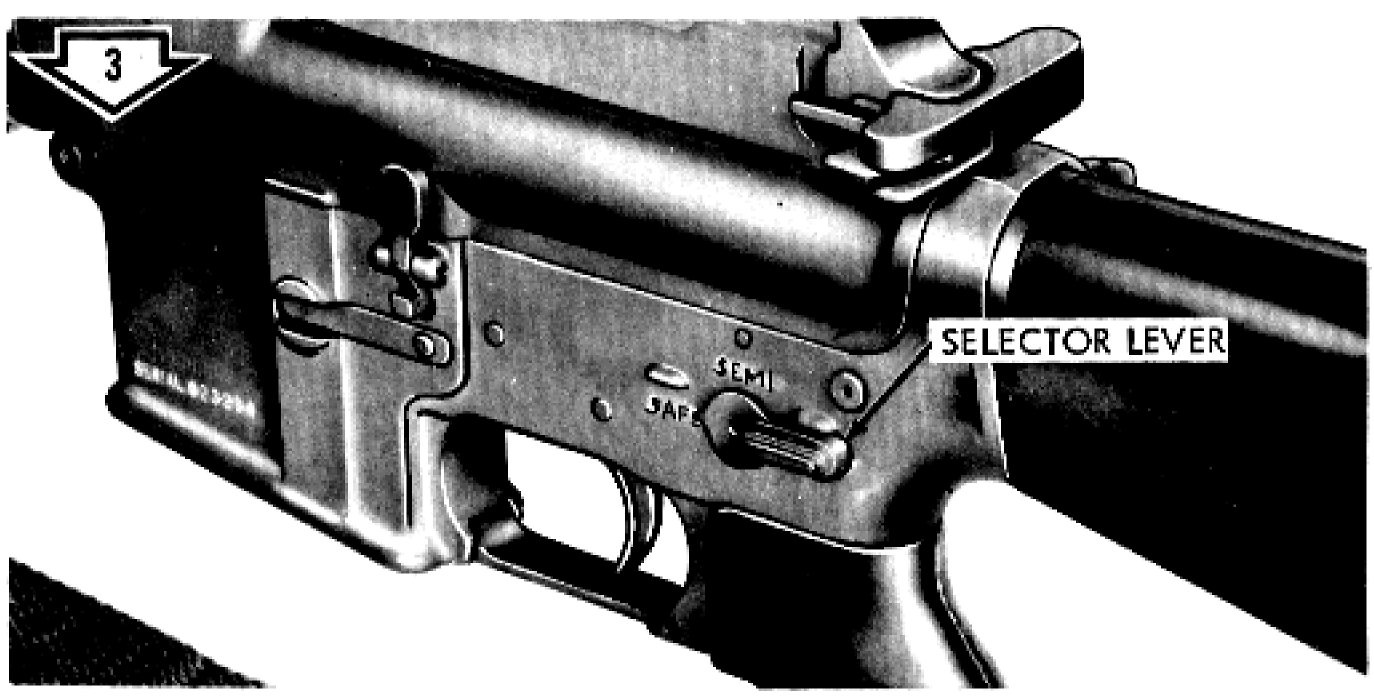
The number in the lower right-hand corner gives the sequence of assembly. 1



Remove magazine.



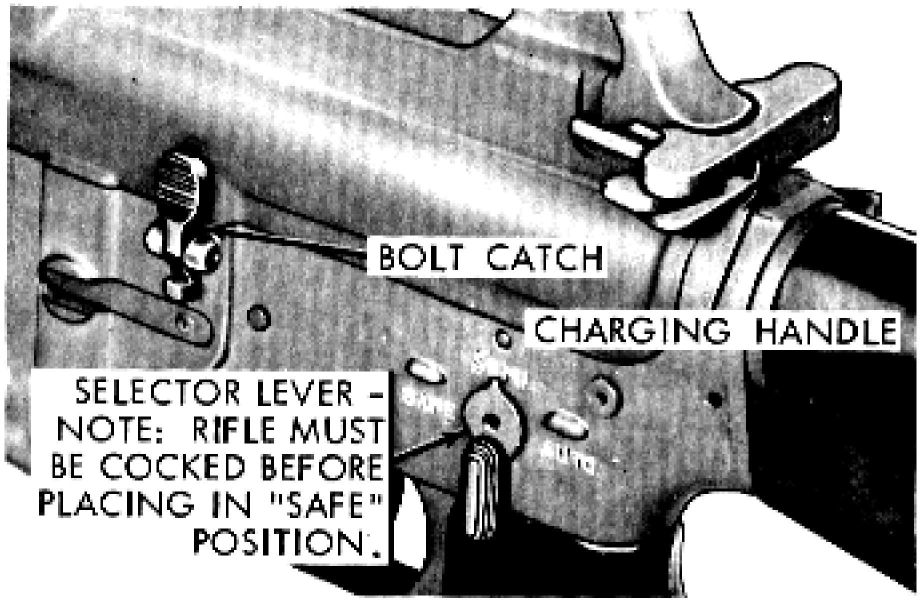
Inspect chamber.



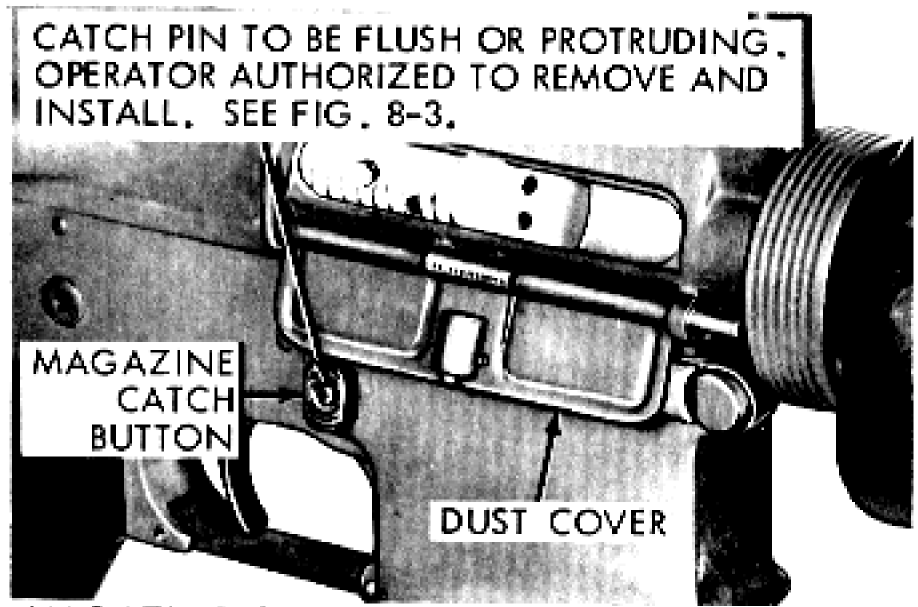
Place selector lever in SAFE position.

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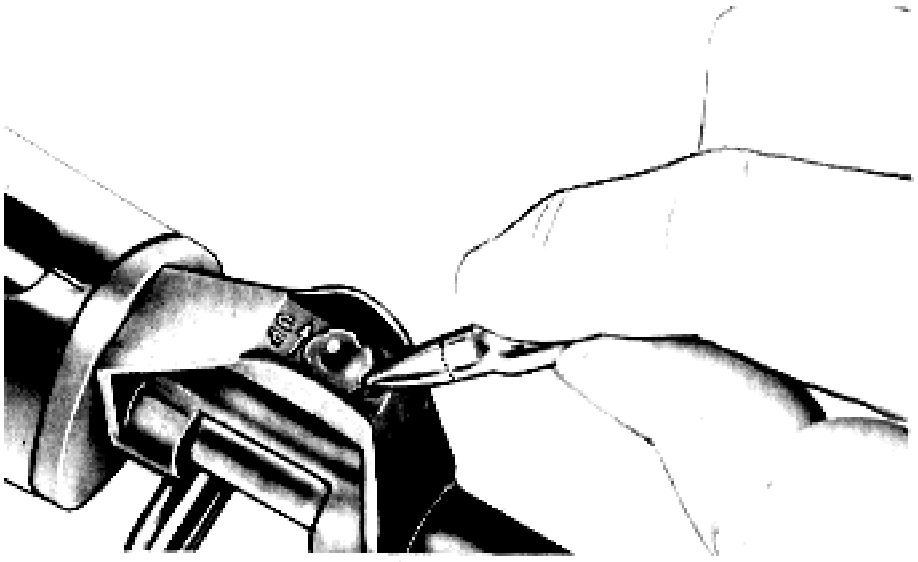
Figure 3-1. Clearing Rifle



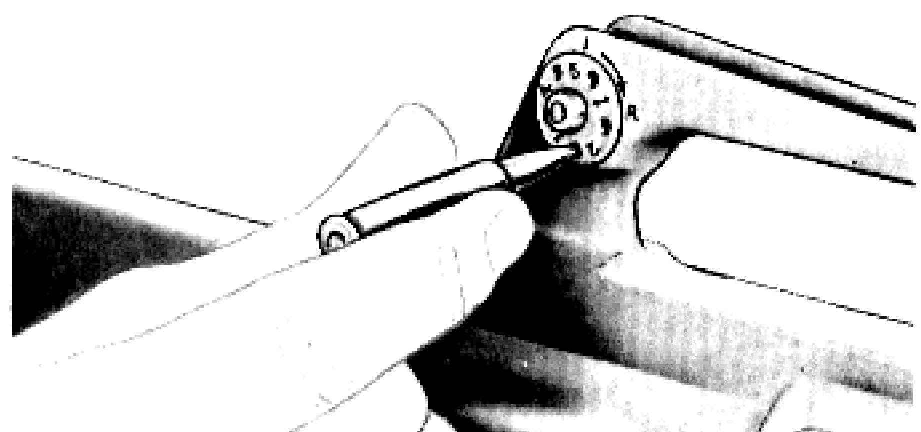
SELECTOR LEVER – Selects "SAFE" position or type of firing.
BOLT CATCH - Holds bolt and bolt carrier in open position. To engage bolt press lower tang of bolt catch. To release bolt press upper tang of bolt catch.
CHARGING HANDLE – Retracts bolt and bolt carrier.



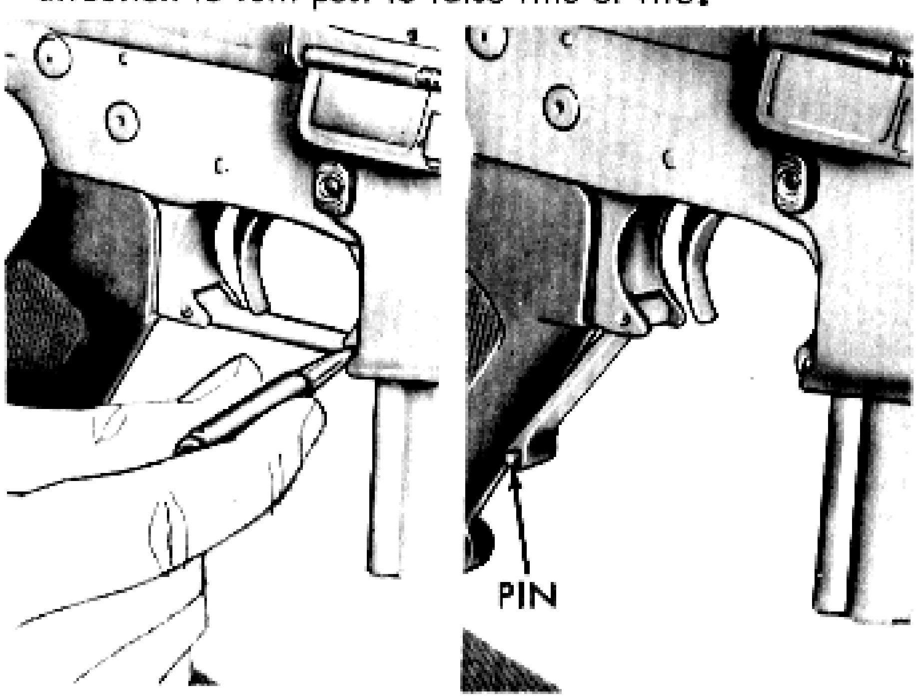
MAGAZINE CATCH BUTTON - Releases magazine when pressed.
DUST COVER - Remains closed to keep dust out and opens automatically when bolt carrier moves rearward or forward.



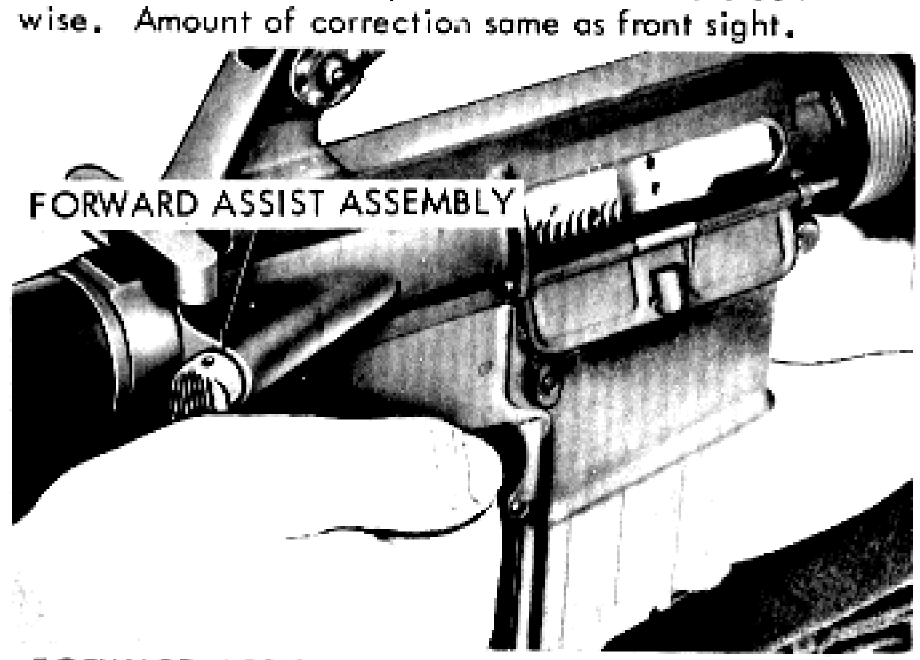
FRONT SIGHT – To adjust elevation; depress detent and rotate post. Each graduation (notch) moves the point of impact of the bullet 2.8 cm at 100 meters, 5.6 cm at 200 meters, etc. UP marked on sight is direction to turn post to raise line of fire.



REAR SIGHT – Has two apertures for range. Unmarked aperture – short (0-300 meters) range. L under aperture – long (300-500 meters) range. To adjust windage – depress detent and rotate drum to desired direction. To move point of impact to right, turn drum clockwise in direction of arrow and letter R. To move left, move drum counterclockwise. Amount of correction same as front sight.



WINTER FIRING - Depress pin and open trigger guard.



FORWARD ASSIST ASSEMBLY - When bolt (XM16E1) fails to close, press forward assist assembly until bolt is moved into closed position.

ORD F9068

Figure 3-2. Controls

3-5. CLEANING AND LUBRICATION BEFORE FIRING.

3-6. MATERIALS. The necessary cleaning materials consist of a cleaning rod, patches, oil, solvent cleaning compound and a brush. Cal. .30 patches may be used by cutting into 4 square pieces. Do not use cleaning agents other than those authorized in this manual.

3-7. CLEANING THE BARREL. Visually inspect the bore and chamber for condition and obstructions. Clean by pushing clean dry patches through the bore (from the chamber to muzzle) to remove all oil and dirt.

3-8. CLEANING AND LUBRICATING THE BOLT CARRIER GROUP. The bolt carrier group may be removed, as shown in figure 3-5, for oiling and removing excessive oil. Remove any oil or dirt from the external surfaces of the bolt and bolt carrier with clean dry patches or rag. Place a drop of oil in each of the two holes in the bolt carrier to lubricate the bolt (piston) rings. Use oil sparingly since excessive oil might form gum on the rings and impair the operation of the rifle. After lubricating the bolt rings, wipe any excess oil from the surface of the bolt carrier. A light film of grease may be applied to slides of bolt carrier and bolt cam pin area of carrier.

3-9. LOADING.

Note

Repeat operation in figure 3-1.

3-10. LOADING THE MAGAZINE. The magazine has a capacity of twenty-rounds and may be loaded with any amount up to that capacity. The magazine follower has a raised portion generally resembling the outline of a cartridge. Cartridges are loaded into the magazine so that the tips of the bullets point in the same direction as the raised portion of the follower.

3-11. LOADING THE RIFLE. The magazine may be inserted with the bolt and bolt carrier opened or closed. Hold the stock of the rifle under the right arm with the right hand. Grasp the pistol grip, and point the muzzle in a safe direction. With the left hand, insert a loaded magazine into the magazine housing. Push upwards until the magazine catch engages and holds the magazine. Rap base of magazine sharply with heel of hand to assure positive retention. If the action is open, depress the upper portion of the bolt catch (figure 3-2) with the thumb of the left hand, allowing the action to close, chambering a round. If the action is closed when the magazine is inserted, pull the charging handle fully to the rear with the right hand and release it.

Note

Do not "ride" the charging handle forward with the right hand. If the charging handle is eased forward from the open position, the bolt may fail to lock. If bolt fails to go fully forward, use the bolt closure forward assist assembly (figure 3-2).

The rifle is now loaded, ready to fire.

WARNING

Make sure the selector lever is in the "safe" position, if not ready to fire.

3-12. FIRING.

3-13. SELECTOR LEVER. The rifle may be fired semi-automatically or fully automatically by moving the selector lever to the desired position described in 3-14 and 3-15.

3-14. SEMI POSITION. With the selector lever in this position, the rifle will fire one round each time the trigger is pulled.

3-15. AUTO POSITION. With the selector lever in this position, the rifle will continue to fire until the magazine is empty or the trigger is released. When the rifle is fired on either SEMI or AUTO, the bolt will lock in open position when the last round from a magazine has been fired.

3-16. STOPPAGE AND IMMEDIATE ACTION.

3-17. A stoppage is an interruption in the cycle of operation. When a stoppage occurs immediate action shall be taken to clear it.

3-18. To apply immediate action follow the sequence below:

a. Wait 10 seconds, then pull charging handle fully to the rear; observe for ejection of cartridge or cartridge case.

1. If a cartridge is ejected, release charging handle to feed a new round. Rap

bolt closing forward assist assembly to assure bolt closure (XM16E1). Attempt to fire the rifle.

2. If a cartridge or case is not ejected, a failure to extract or feed has occurred. Check for round in chamber. If chamber is empty, change magazines, reload and attempt to fire the rifle.

b. If a.1. above occurs, it may indicate a defective round, a broken firing pin, hammer spring or a bolt closure failure.

3-19. UNLOADING.

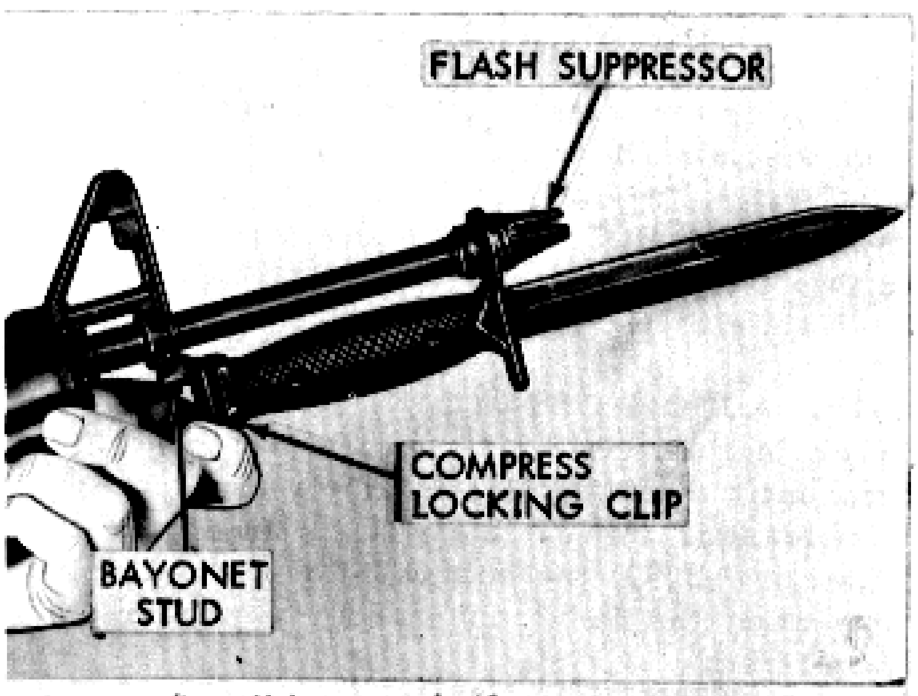
3-20. Repeat operation in figure 3-1.

3-21. INSTALLING ACCESSORIES.

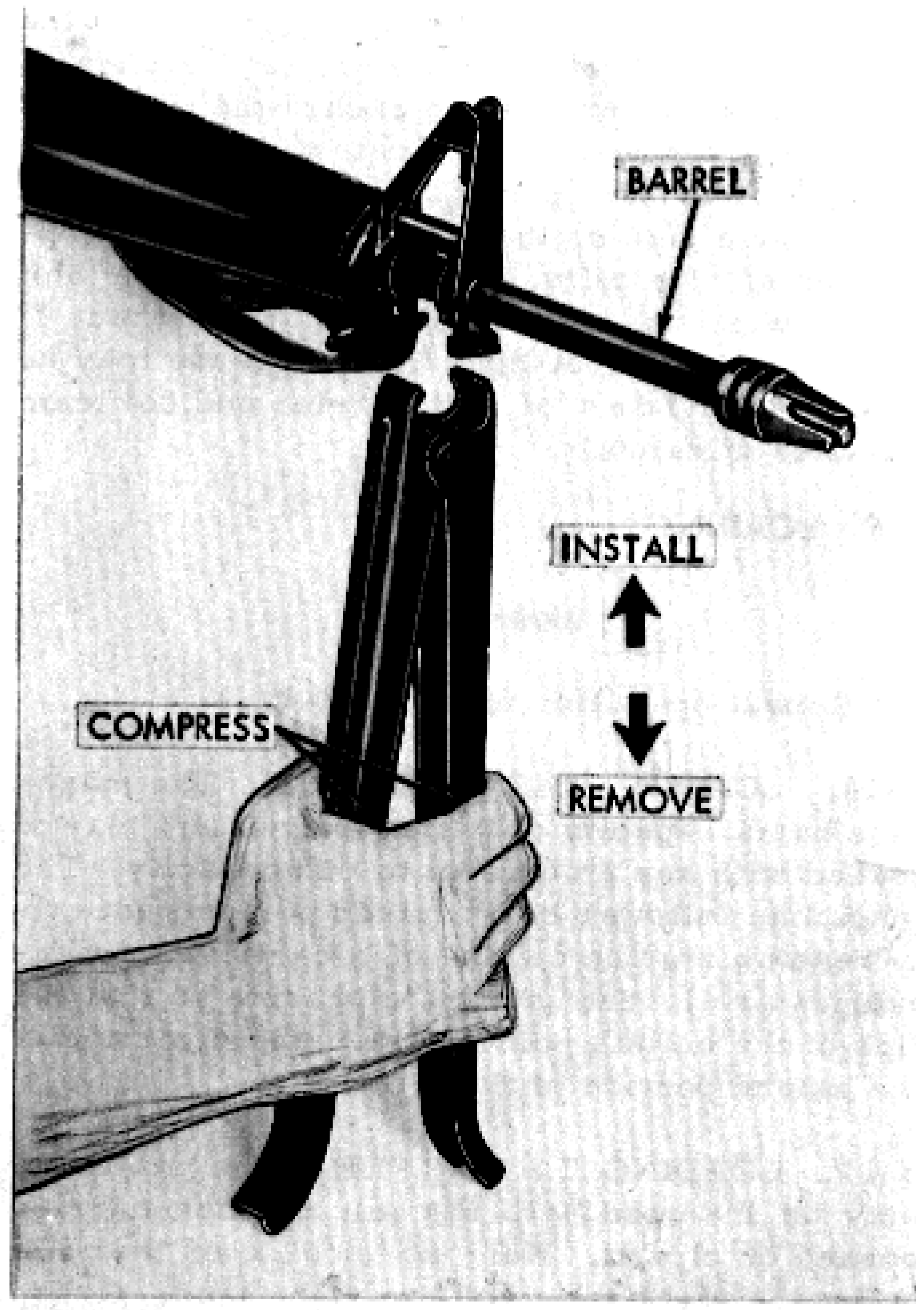
3-22. Refer to figure 3-3 for installing accessories.

3-23. DISASSEMBLY/ASSEMBLY.

3-24. The major groups are illustrated in figure 3-4. For disassembly / assembly refer to figure 3-5.



Remove/Install bayonet-knife.



Remove/Install bipod.

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Figure 3-3. Installing Accessories

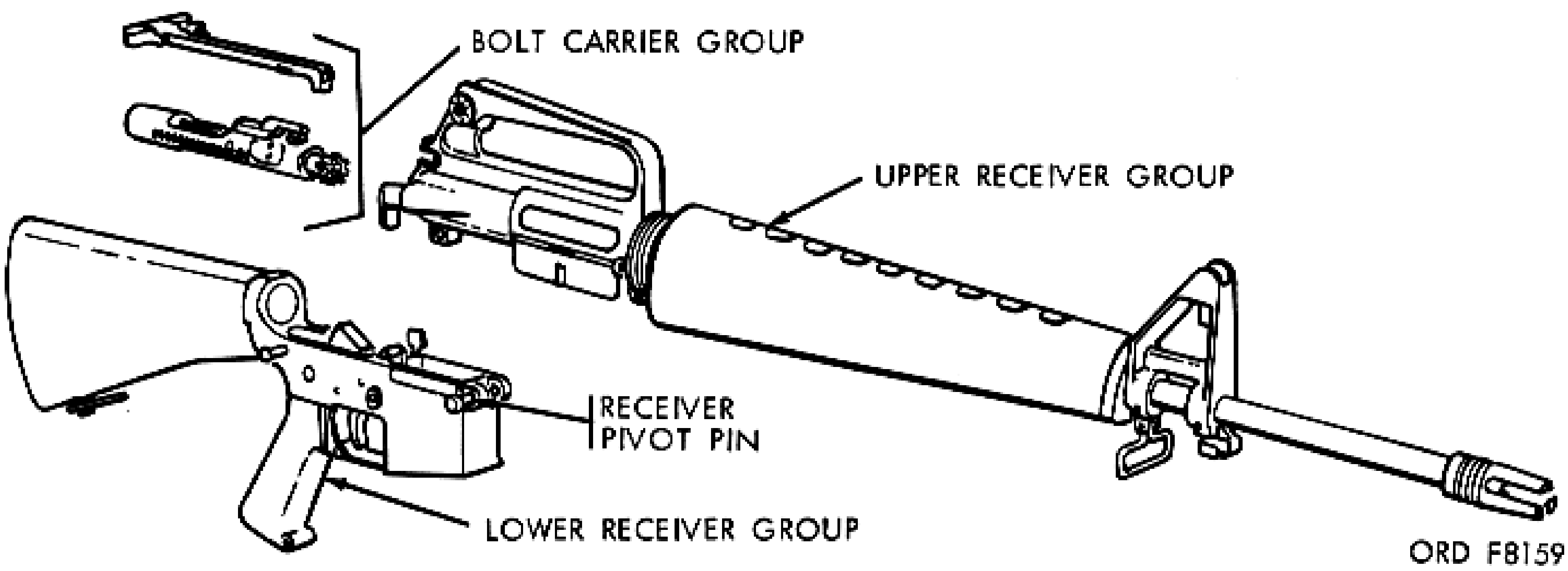
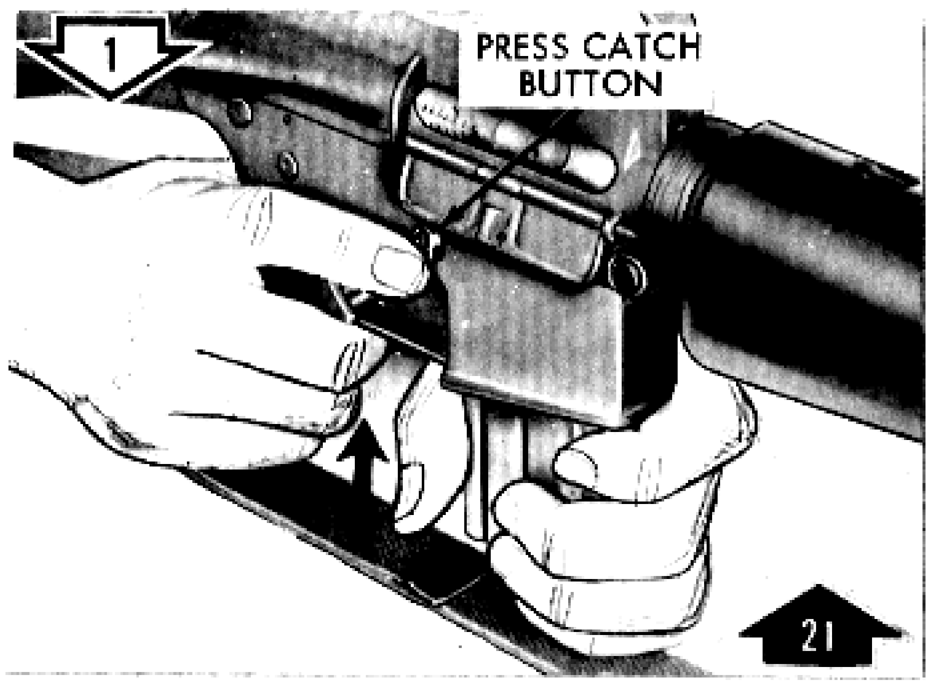
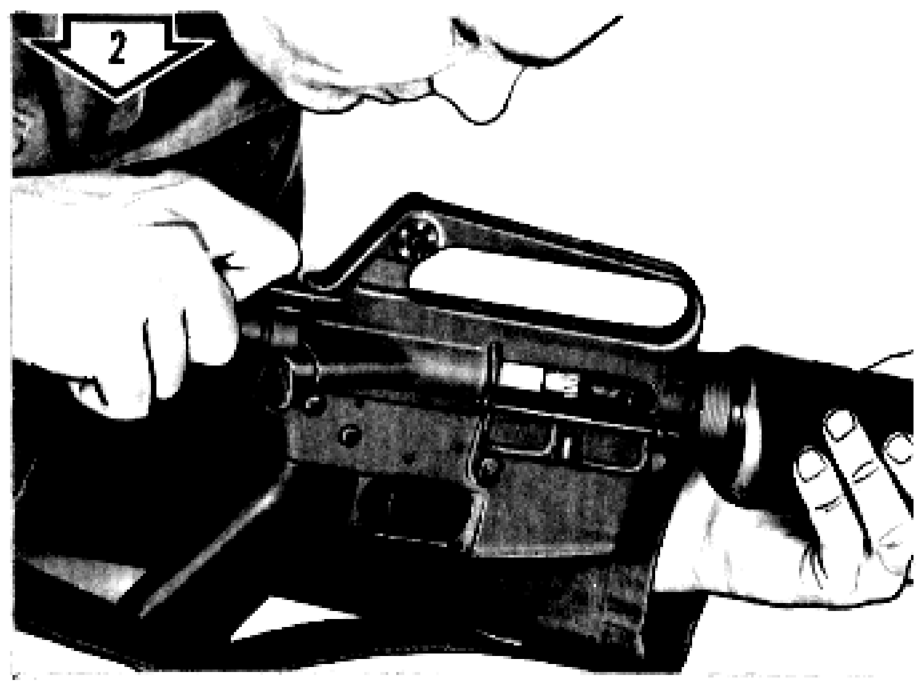


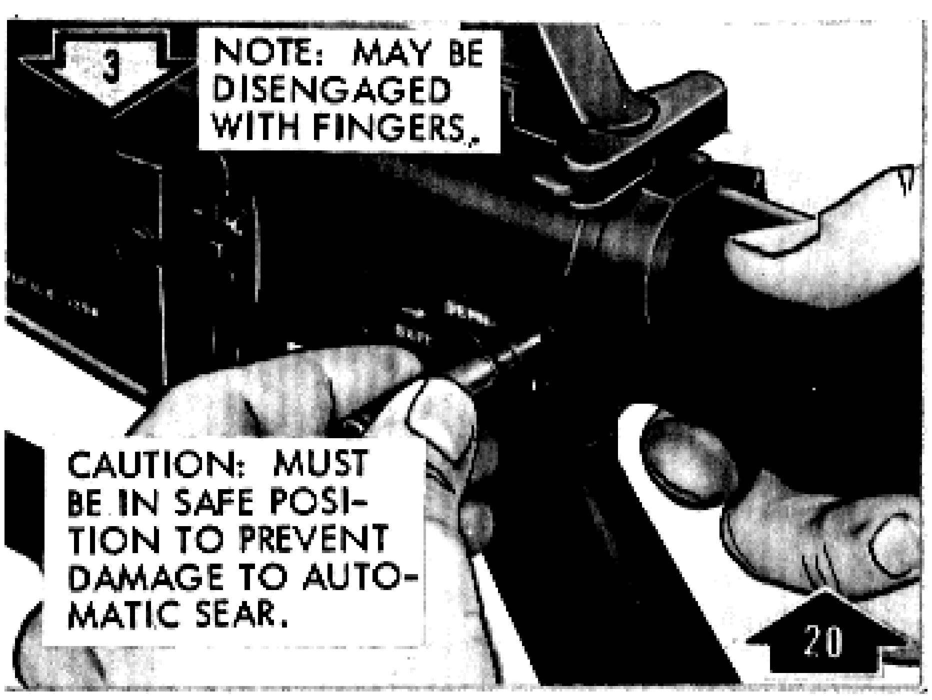
Figure 3-4. Rifles, 5.56-mm, M16 and XM16E1 Major Groups



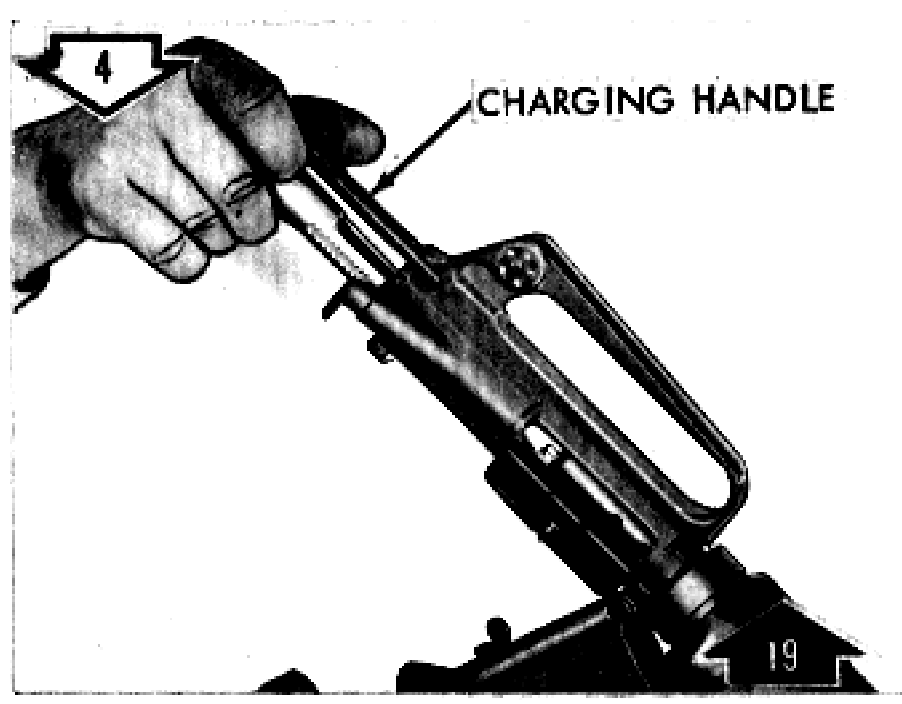
Remove/Install magazine.



Open bolt and inspect chamber.



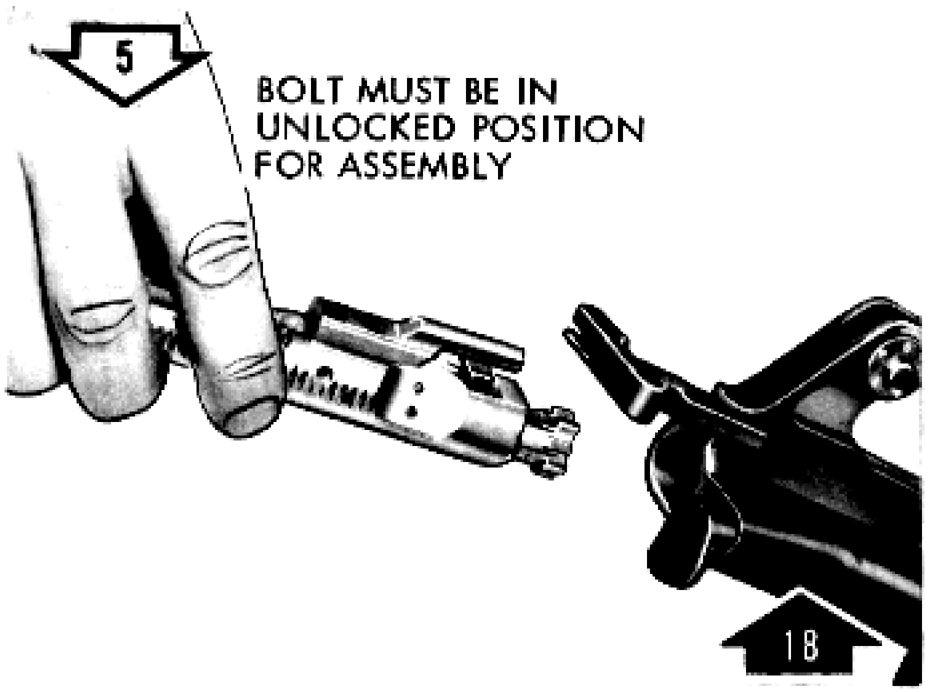
Disengage/Engage take-down pin.



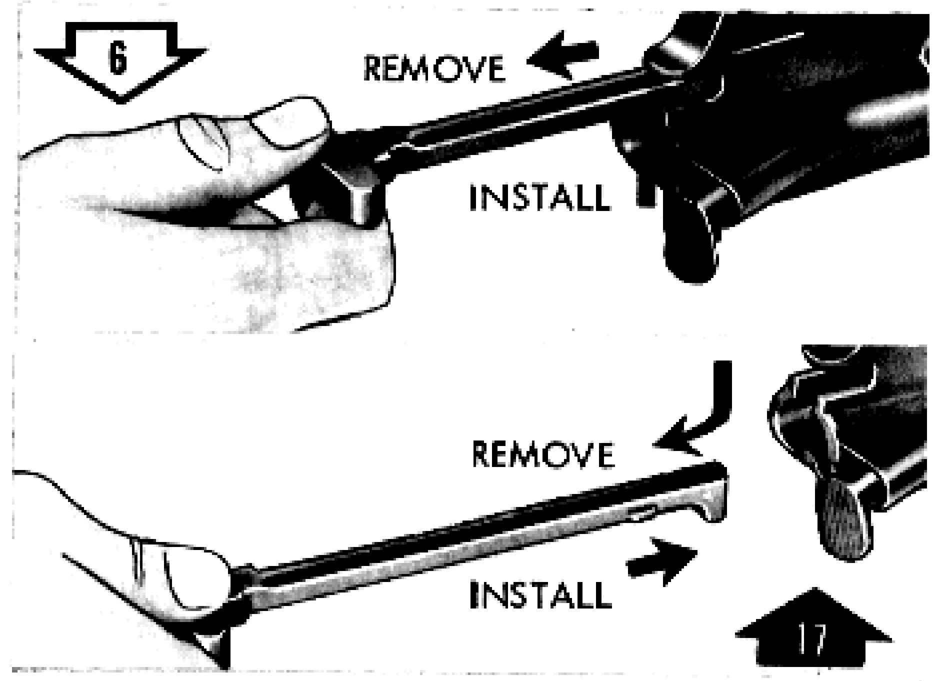
Withdraw/Insert charging handle and bolt carrier and key assembly.

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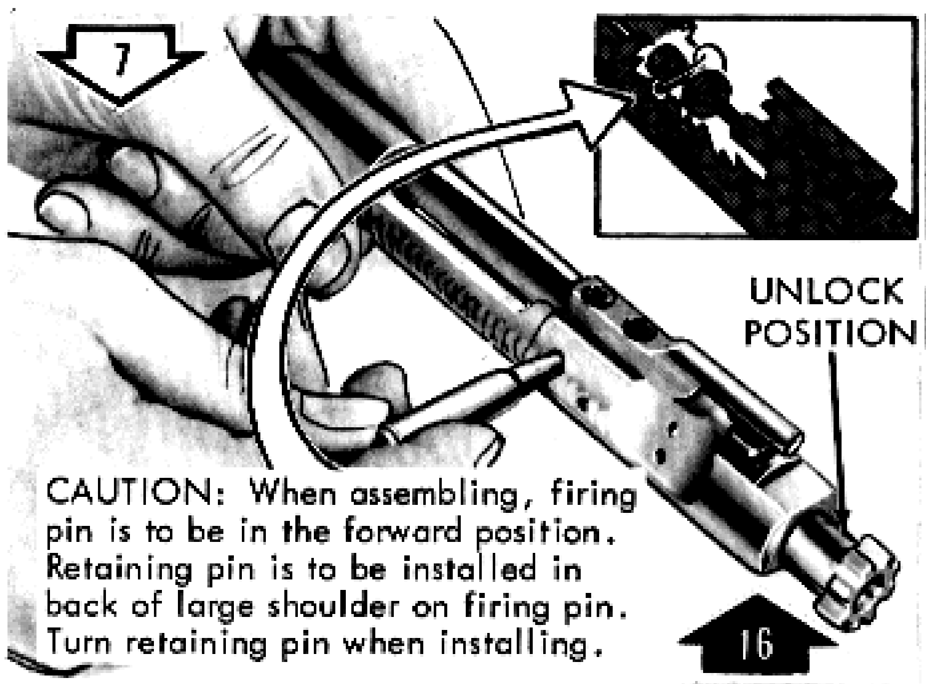
Figure 3-5. Disassembly/Assembly of Rifle (Page 1 of 5)



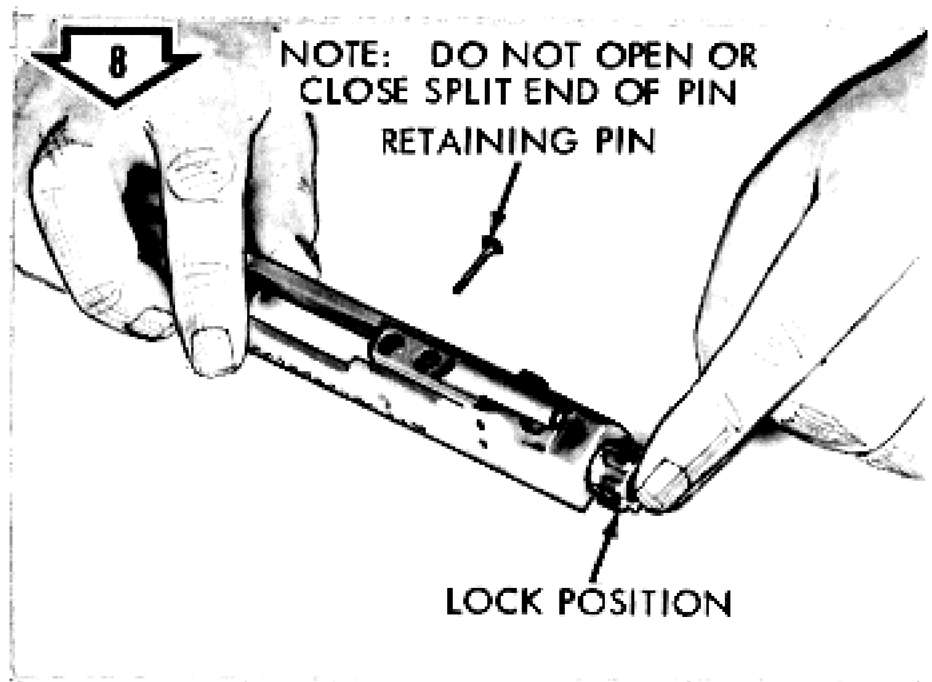
Remove/Install bolt carrier and key.



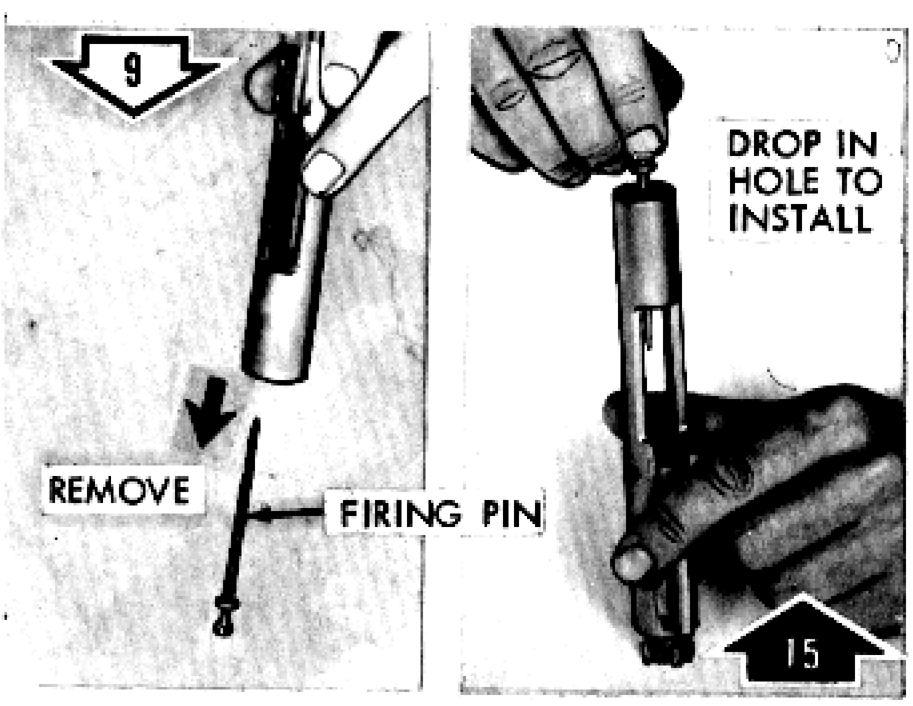
Remove/Install charging handle.



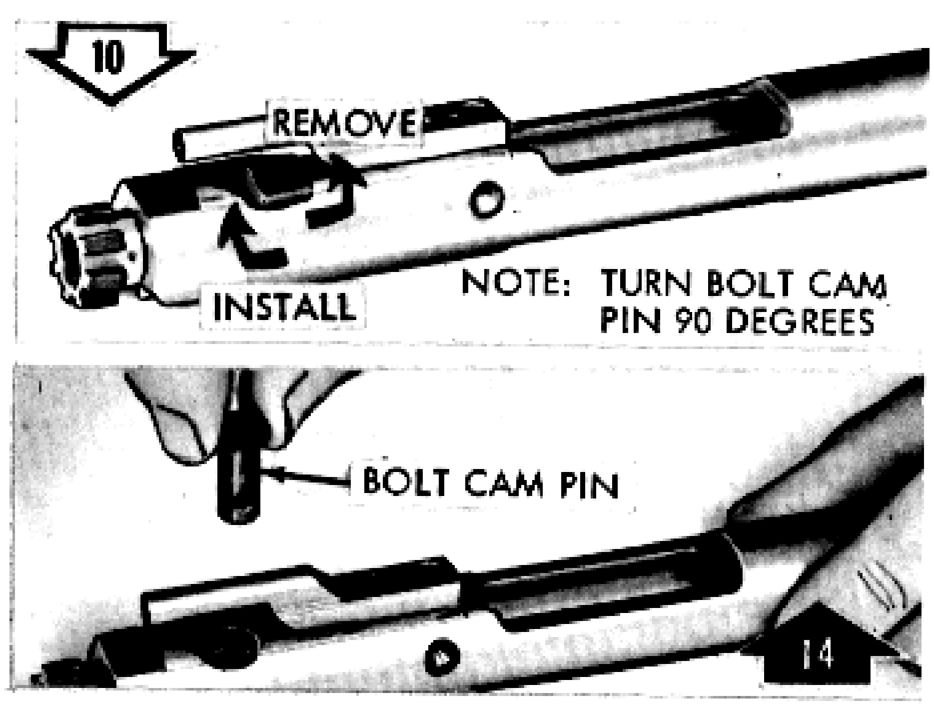
Remove/Install firing pin retaining pin.



Place bolt in lock position.



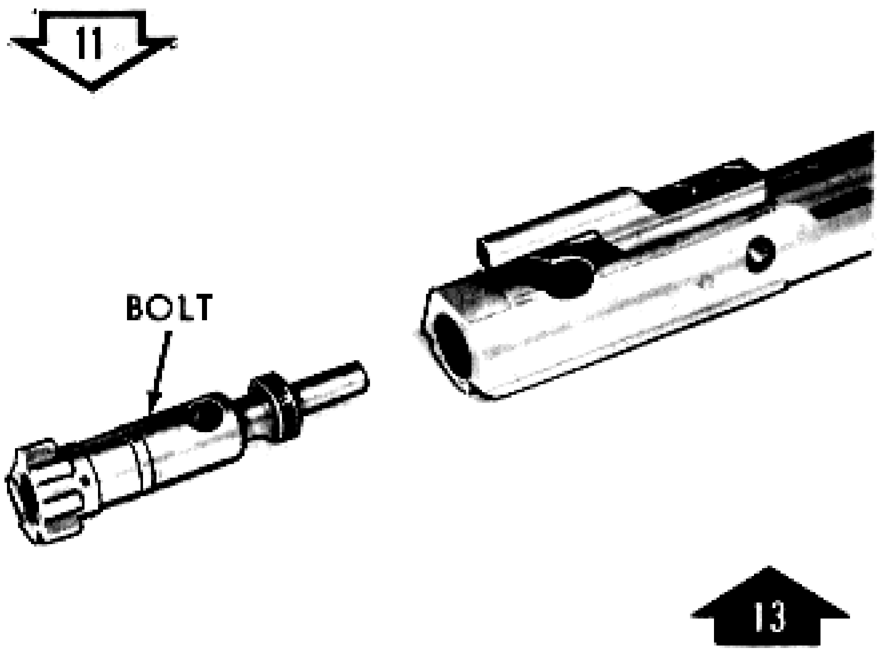
Remove/Install firing pin.



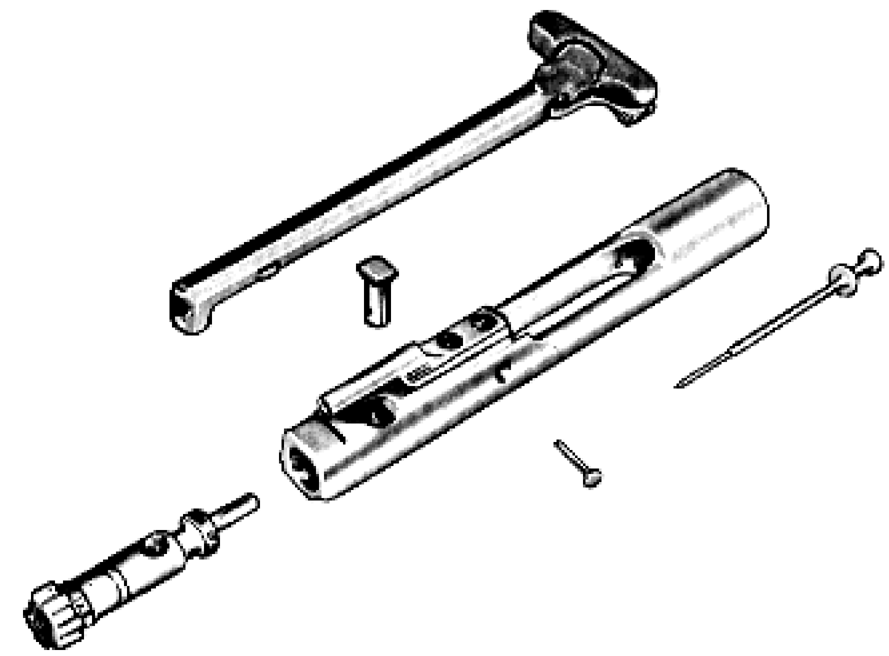
Remove/Install bolt cam pin.

ORD F8140

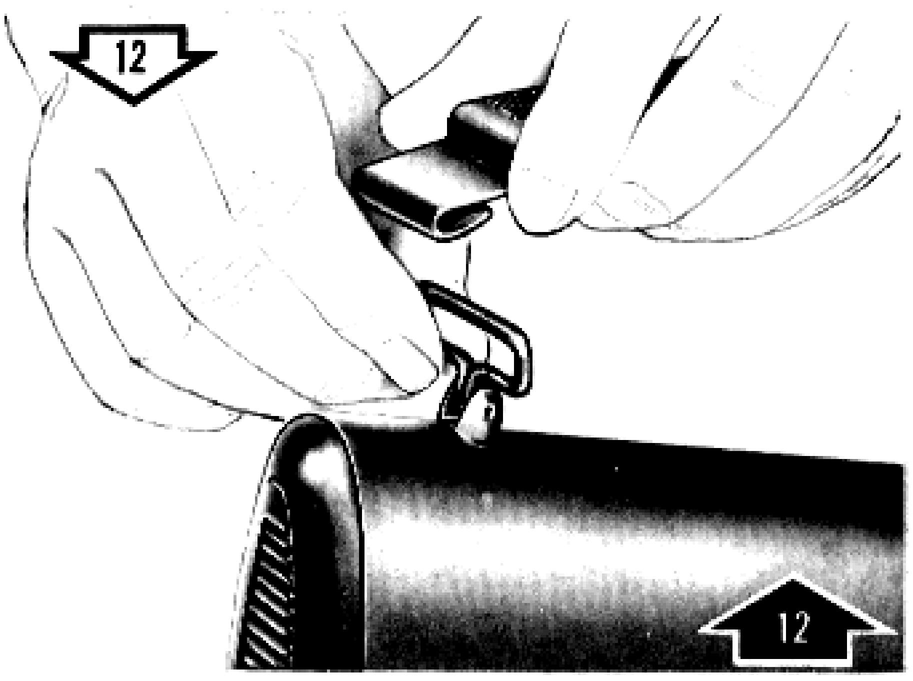
Figure 3-5. Disassembly/Assembly of Rifle (Page 2 of 5)



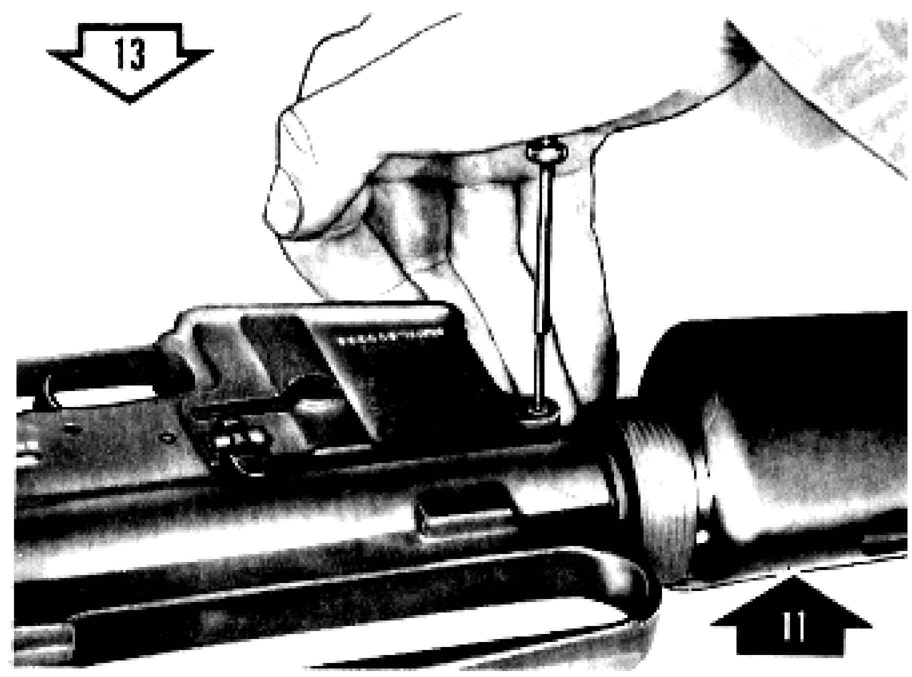
Remove/Install bolt from bolt carrier and key.



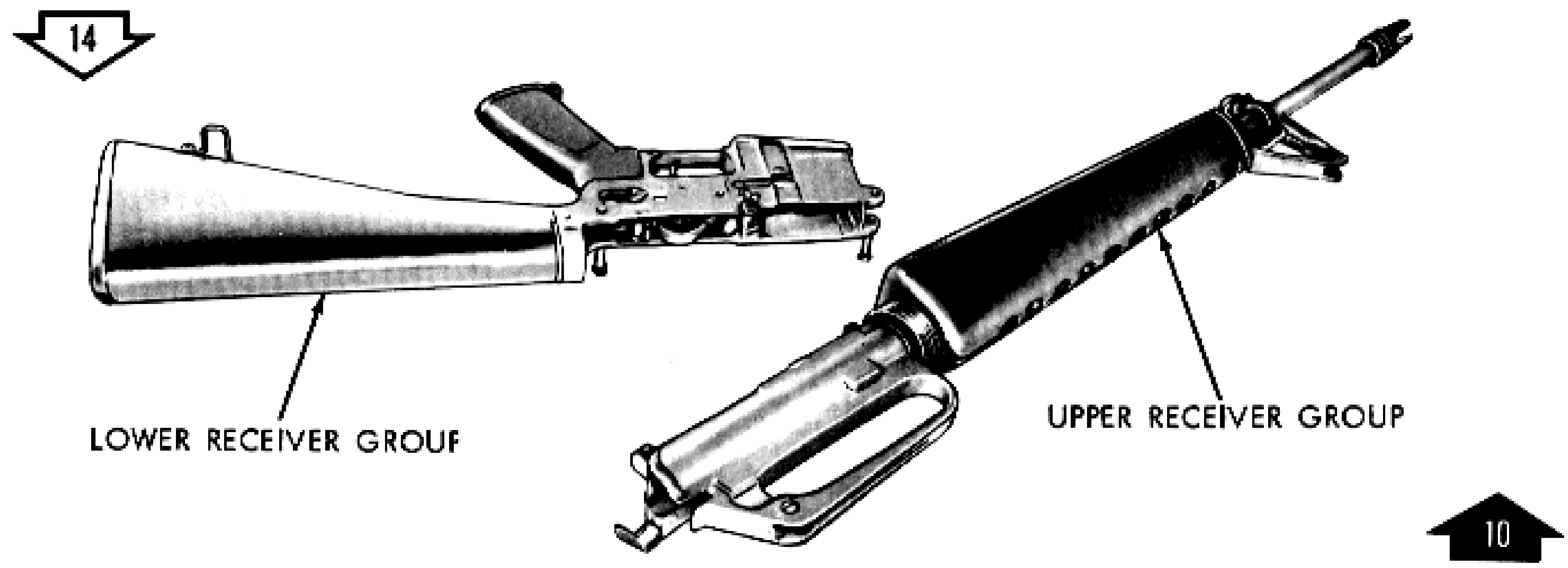
Bolt carrier group parts.



Remove/Install sling.



Disengage/Engage receiver pivot pin.



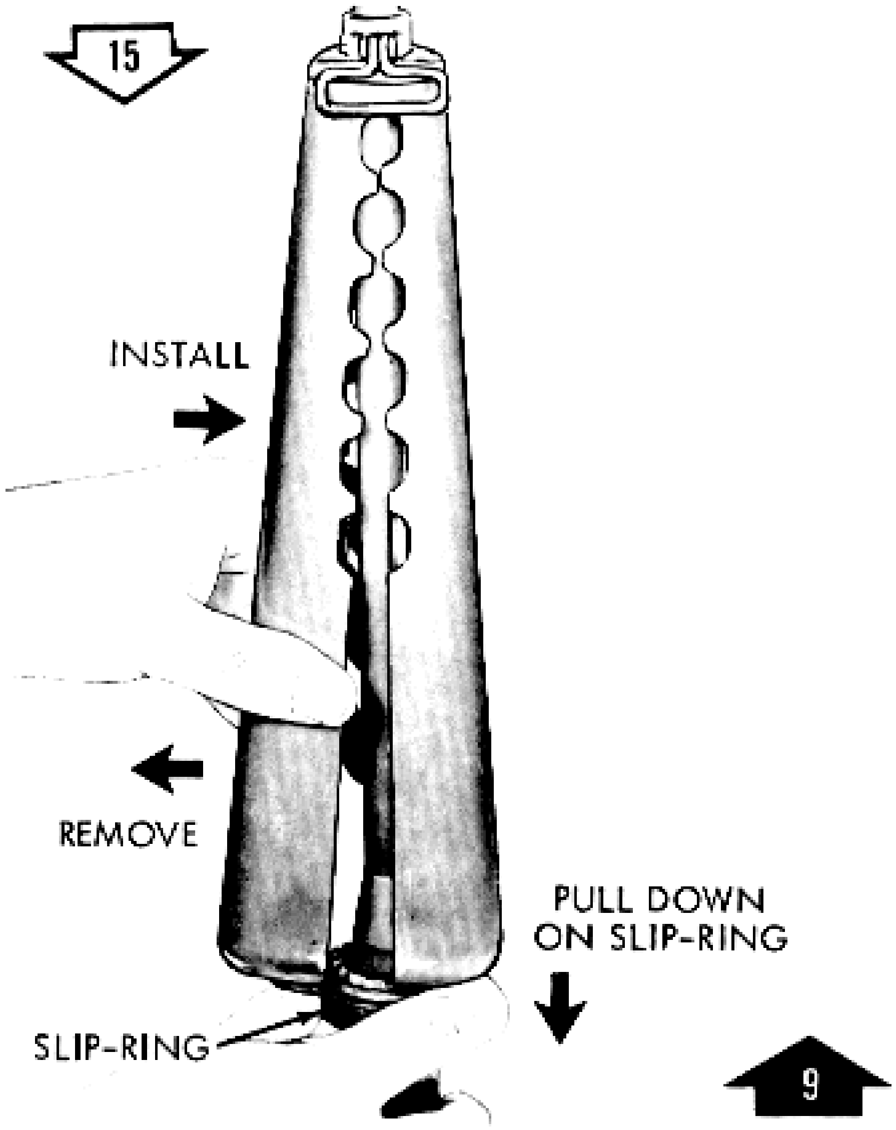
Separate/Join upper receiver and lower receiver groups.

ORD F8141

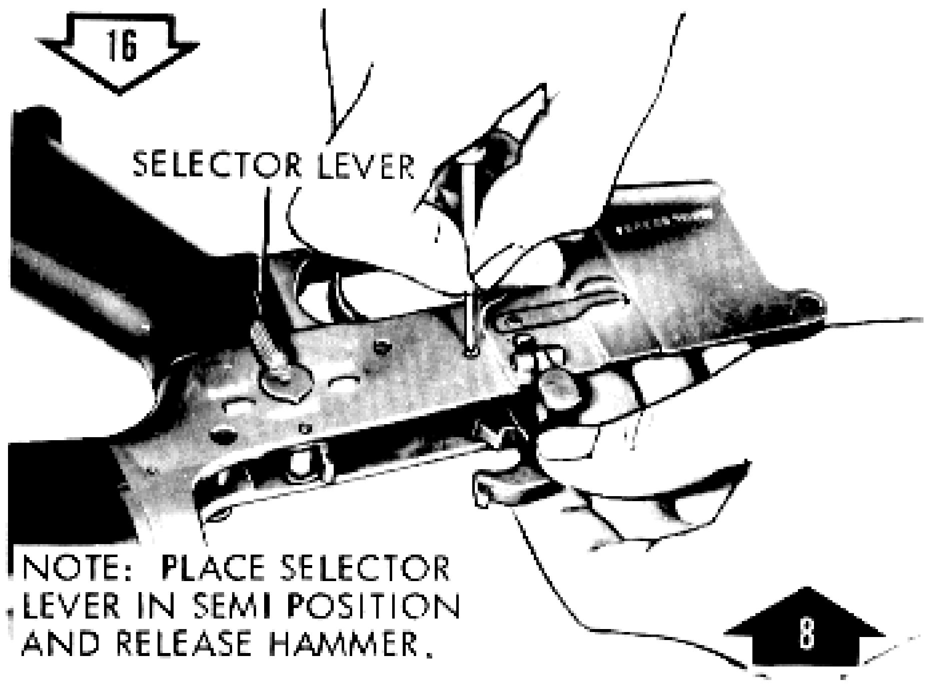
Figure 3-5. Disassembly/Assembly of Rifle (Page 3 of 5)

NOTE: LOWER RECEIVER PARTS SHOULD NOT BE REMOVED EXCEPT FOR DIRTY CONDITION WHICH MAY CAUSE MALFUNCTION.

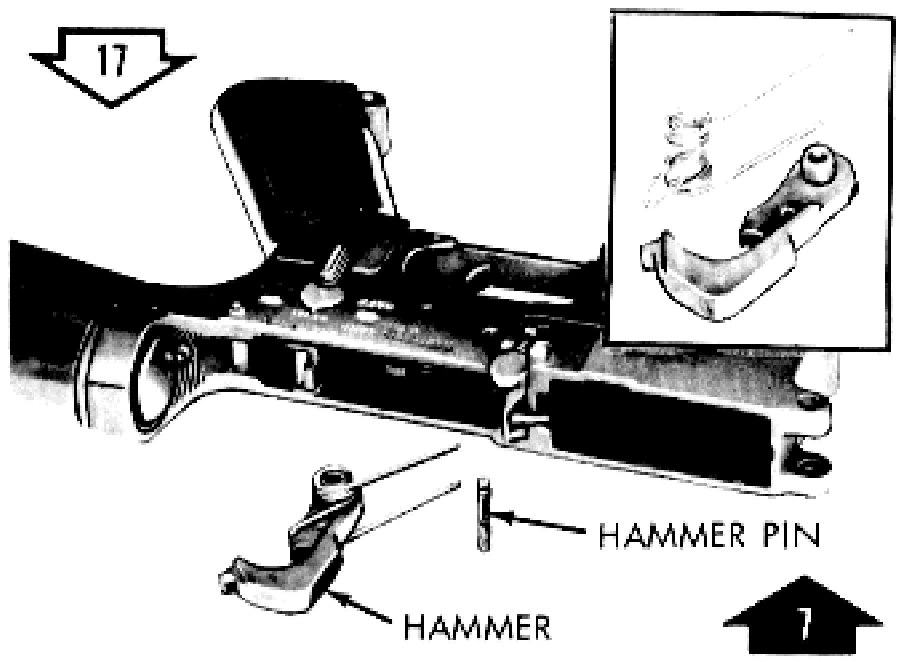
NOTE: FIRING PIN MAY BE USED AS A GUIDE FOR ALINEMENT OF PARTS FOR INSTALLATION OF PINS.



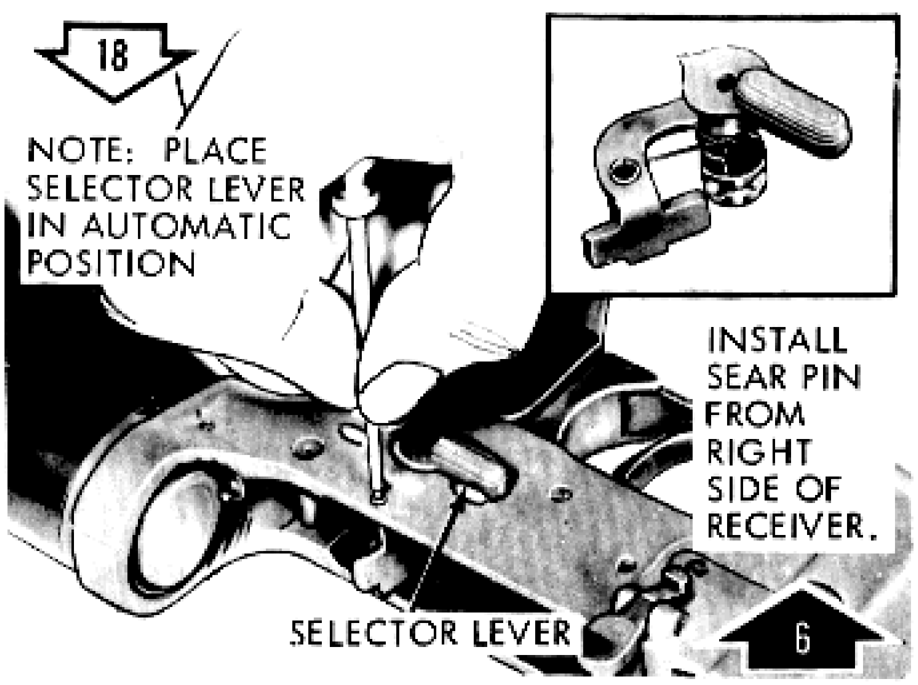
Remove/Install handguards.



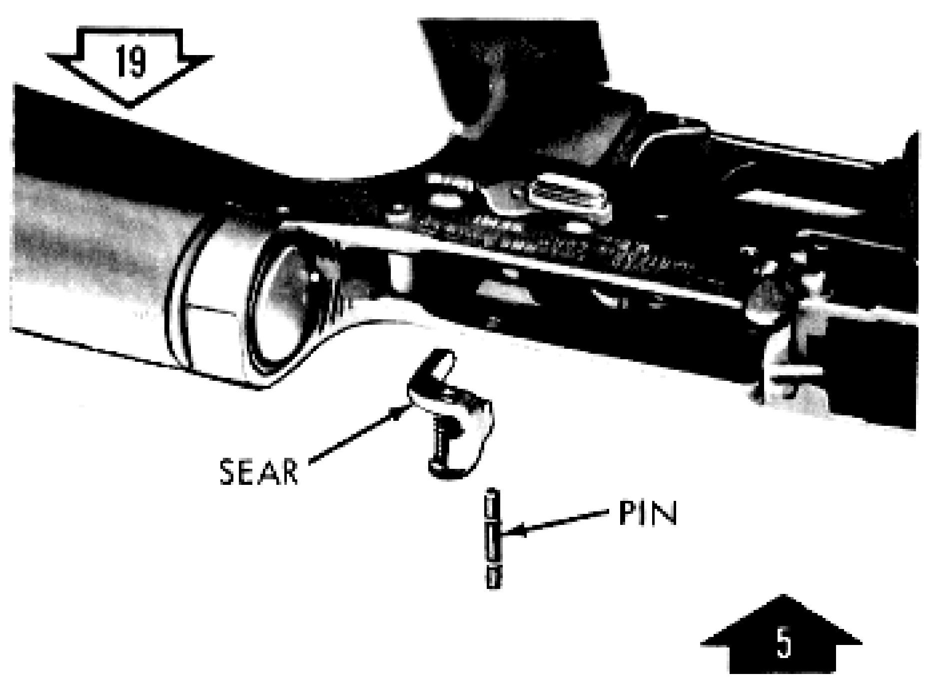
Remove/Install hammer pin.



Remove/Install hammer assembly and hammer spring.



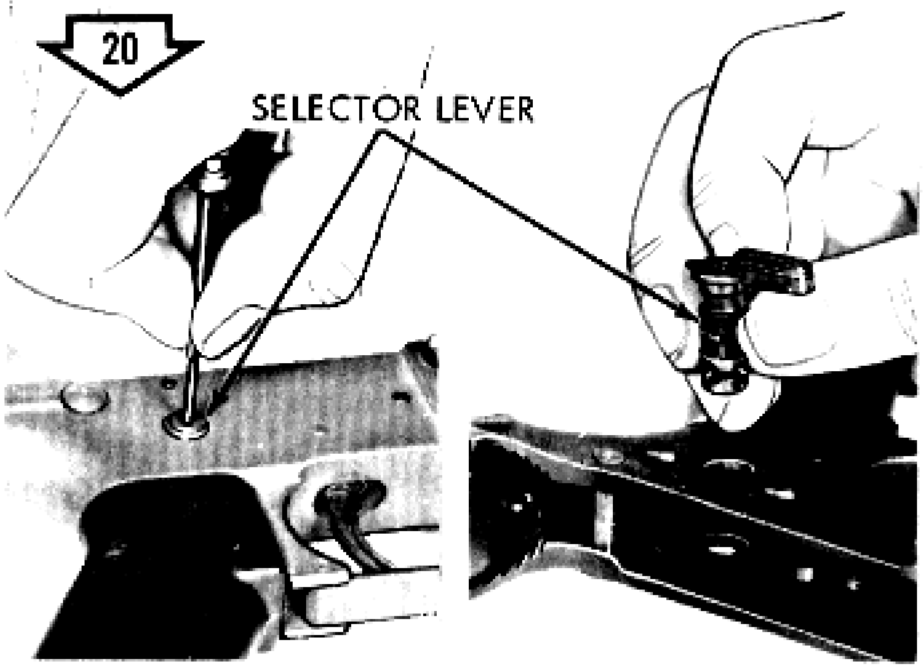
Remove/Install automatic sear pin.



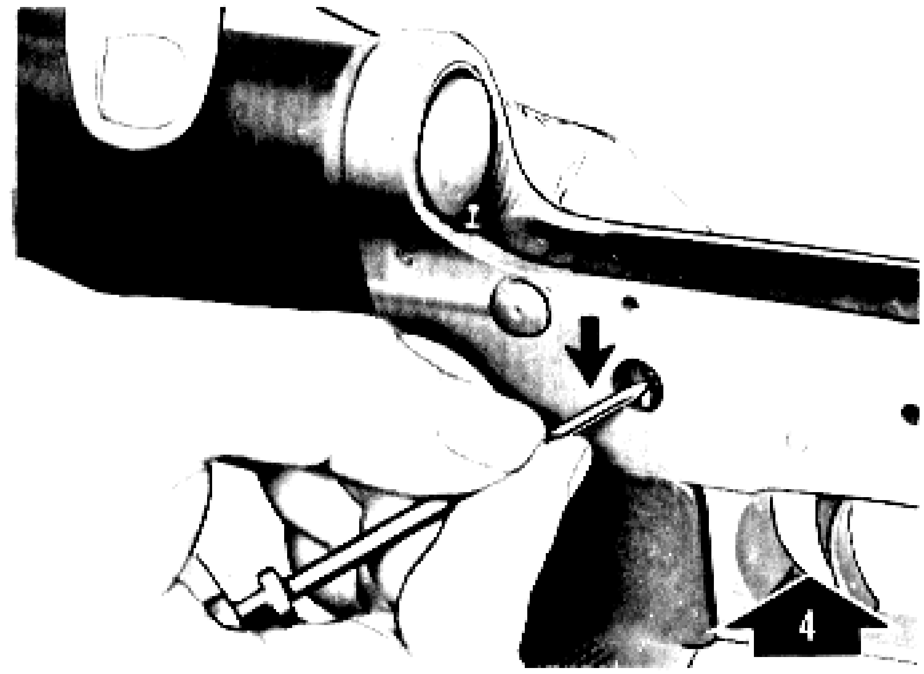
Remove/Install sear.

ORD F8142

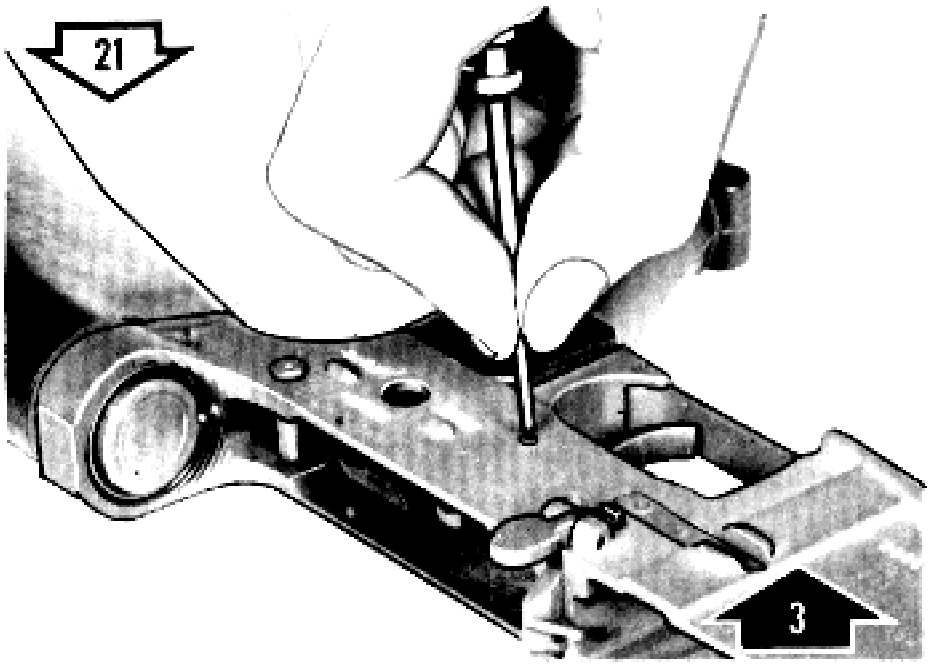
Figure 3-5. Disassembly/Assembly of Rifle (Page 4 of 5)



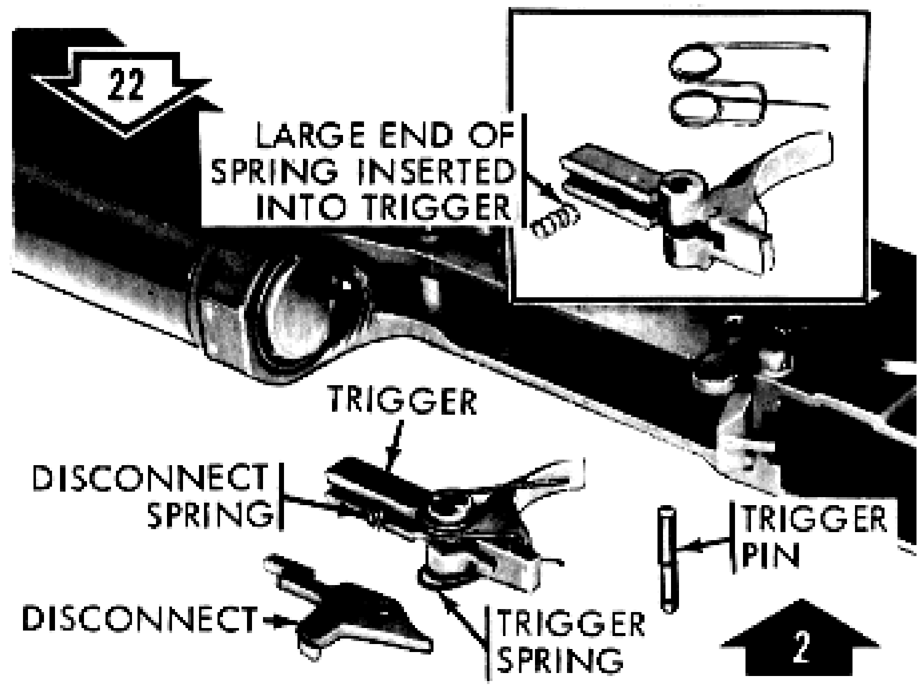
Disengage and remove selector lever.



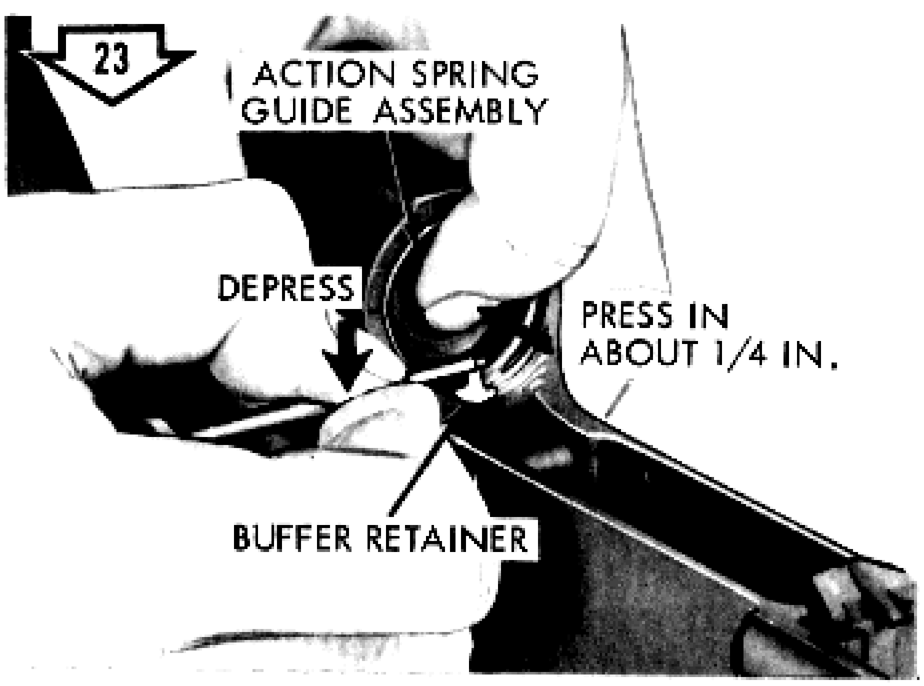
Depress detent - install selector lever.



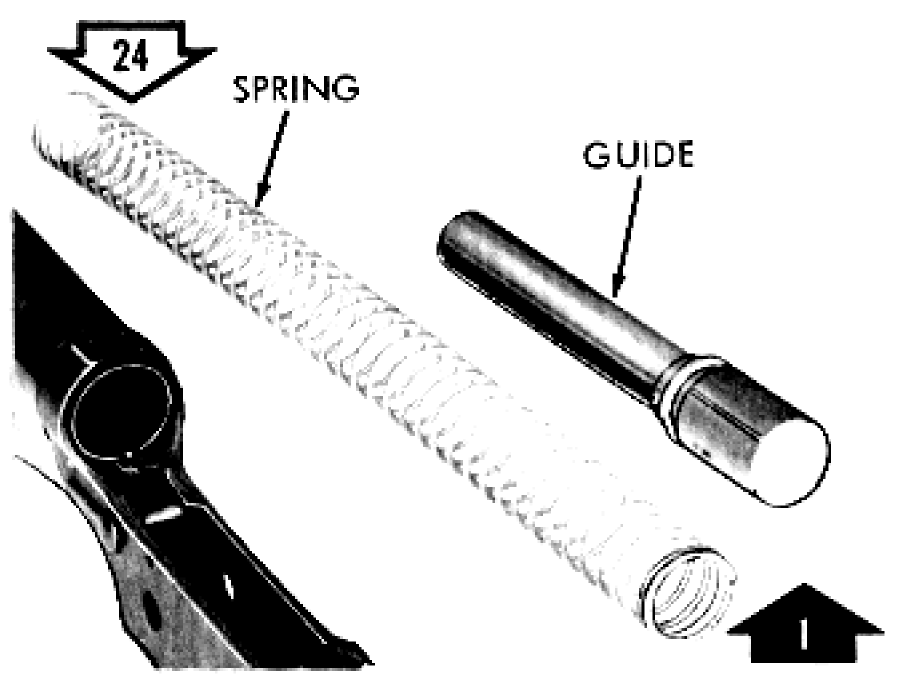
Remove/Install trigger pin.



Remove/Install trigger, trigger spring, disconnect, and disconnect spring.



Press in action spring guide assembly, depress buffer retainer, and then release guide.



Remove/Install action spring guide assembly and action spring.

ORD F8143

Figure 3-5. Disassembly/Assembly of Rifle (Page 5 of 5)

3-25. CLEANING AND LUBRICATION AFTER FIRING. All parts are to be cleaned with cleaning compound solvent (PD 126) and dried thoroughly. Apply a light coat of lubricating oil to all metal surfaces (including barrel under handguards). A light coat of rifle grease from the 5cc container is to be applied to the slides of bolt carrier.

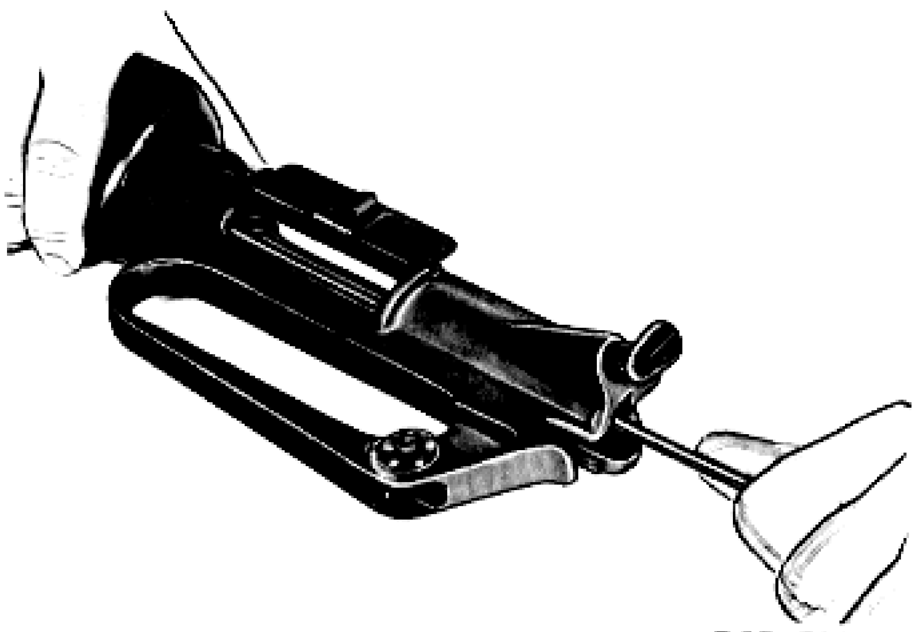

ORD F8144

Figure 3-6. Cleaning Bore with Cleaning Rod - M11 and Brush - 11010021

3-26. CLEANING AND LUBRICATING THE BARREL.

a. Attach the wire brush to the cleaning rod, dip in solvent cleaning compound, and brush the bore thoroughly (figure 3-6). Brush the bore from chamber to muzzle using straight through strokes.

Note

Do not reverse direction of brush while in bore.

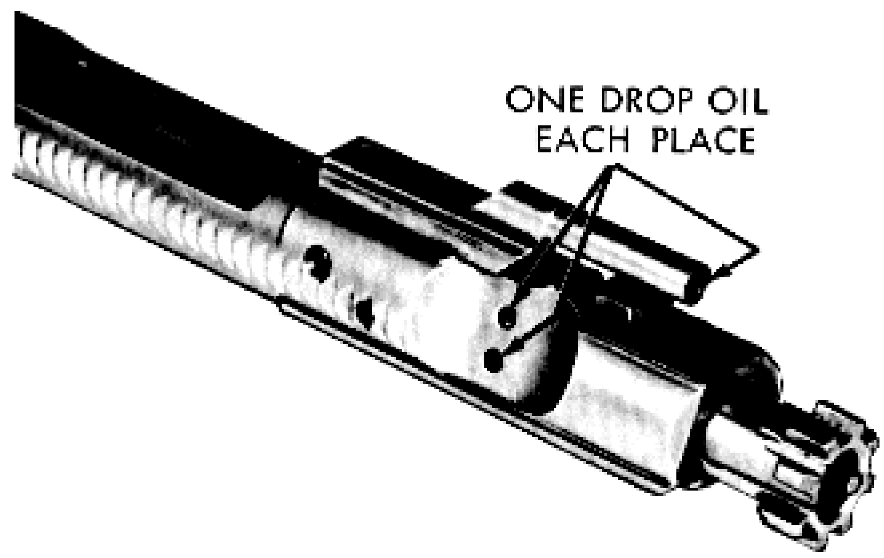
Push the brush through the bore until it extends beyond the muzzle. Continue until the bore is well covered with compound. Remove the brush from the cleaning rod, and dry the bore by pushing through clean dry patches. Continue until patches come out clean and dry.

b. Clean the locking lugs in the barrel extension, just to the rear of the chamber. Brush the lugs with a small brush.

c. After cleaning, lubricate the bore with a lightly oiled patch to prevent corrosion and pitting. Lightly oil the lugs in the barrel extension.

3-27. CLEANING AND LUBRICATING THE BOLT CARRIER GROUP.

a. Remove the bolt carrier group from the upper receiver group. Field strip the bolt carrier group. Wash all external surfaces with a patch saturated in solvent cleaning compound.



ORD F8145

Figure 3-7. Oiling Bolt Rings

b. Using a small brush dipped in solvent cleaning compound, scrub all carbon deposits and dirt from the locking lugs of the bolt.

CAUTION

Brush the face of the bolt, paying particular attention to area behind the rings and under the face of extractor. Do not attempt to remove discoloration caused by heat.

When dry, place a drop of oil in each hole on the bolt rings and gas tube (figure 3-7). Add a light coat of oil to all surfaces of bolt and bolt carrier.

3-28. CLEANING AND LUBRICATING THE LOWER RECEIVER GROUP.

a. Wipe any particles of dirt from the trigger mechanism with a clean patch or brush.

b. Place a drop of oil on each of the pins for lubrication.

3-28A. CLEANING OF SCABBARD M8A1 AND SLING.

a. To prevent mildew, shake out and air sling and scabbard at frequent intervals. Mildewed canvas is cleaned by scrubbing with a dry brush.

b. If mildew is present, examine fabric carefully for evidence of rotting or weakening of fabric by stretching and pulling. If fabric shows indication of loss of tensile strength, turn in for replacement.

c. If water is necessary to remove dirt, it must not be used until mildew has been removed. Oil and grease may be removed by scrubbing with issue soap and water. Rinse well with water and dry.

CAUTION

At no time is gasoline or any solvent to be used to remove oil or grease from canvas. Canvas should be dried thoroughly.

3-28B. CLEANING AND MAINTENANCE OF BAYONET-KNIFE, M7.

a. Clean bayonet-knife of dirt and/or grease.

b. Release shall work freely and return to lock position.

c. Nicks, dents, and burs shall be removed by organizational support.

3-29. FUNCTION CHECK.

Note

Remove magazine.

3-30. A complete function check of the rifle consists of checking the operation of the rifle while the selector lever is in the SAFE, SEMI, and AUTO positions. The following sequence is used for a rapid, complete check. Any portion of the check may be used alone to determine the operational condition of any specific fire selection.

Note

Disengage takedown pin and open receivers. Hammer shall be in the cocked position.

a. SAFE position. Pull trigger, hammer shall not fall.

b. SEMI position. Pull trigger, hammer should fall. Hold trigger to rear, recock hammer and release trigger. Hammer should transfer from hammer hooks and disconnect to the hammer and sear engagement.

c. AUTO position. Pull trigger, hammer should fall. Hold trigger to the rear and recock the hammer. Hammer is now under the automatic sear. Still holding trigger to the rear, push forward on automatic sear. The hammer should fall. Still holding trigger to the rear, recock hammer, release trigger and push forward on automatic sear. Hammer should fall to the sear engagement.

Note

Close receivers and engage takedown pin.

d. SEMI position. Close the upper and lower receiver groups and push the take down pin into place. Pull the charging handle to the rear. Inspect the chamber for safety and release charging handle. Pull the trigger. Hammer should fall.

CHAPTER IV
PREVENTIVE MAINTENANCE

4-1. GENERAL.

4-2. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational readiness. The operator's role in the performance of preventive maintenance service is:

a. To perform the daily service each day the rifle is operated.

b. To assist the organizational maintenance mechanics in the performance of any other scheduled periodic services specified by pertinent technical manuals.

4-3. RESPONSIBILITY.

4-4. Operators are responsible for assigned equipment. Squad, flight, or platoon leaders are charged supervisory responsibility for equipment pertaining to their commands.

4-5. SPECIFIC PROCEDURES.

4-6. Table 4-1 gives the specific procedures to be performed on the rifle by the operator for each daily service.

Table 4-1. Preventive Maintenance Checks and Services

Interval & Sequence No.			Operator		Daily Schedule
Before Firing	During Firing	After Firing	Item to be Inspected	Procedures	Paragraph References
1			Rifle	Wipe oil from bore and chamber.	Para. 3-7
2			Rifle	Retract bolt to assure free movement between bolt carrier and gas tube.	Para. 3-1
3			Rifle	Hand function to assure proper operation.	Para. 3-29
4			Rifle	Check magazine for positive retention and functioning of bolt catch.	Para. 3-11
		5	Rifle	Clean and lubricate. Particular attention to clean bolt carrier key.	Para. 3-25

CHAPTER V
AMMUNITION

5-1. GENERAL.

5-2. The ammunition (figure 5-1) for the 5.56-mm rifles M16 and XM16E1 is classified as small-arms ammunition and is issued in the form of a complete round. A complete round (cartridge) consists of all the components necessary to fire the weapon once, that is, projectile (bullet), cartridge case, propellant, and primer.

5-3. CLASSIFICATION.

5-4. Based upon type of projectile, ammunition when available for use in this rifle will be classified as outlined in paragraphs a through d.

a. Ball cartridge, for use against light materiel targets and personnel.

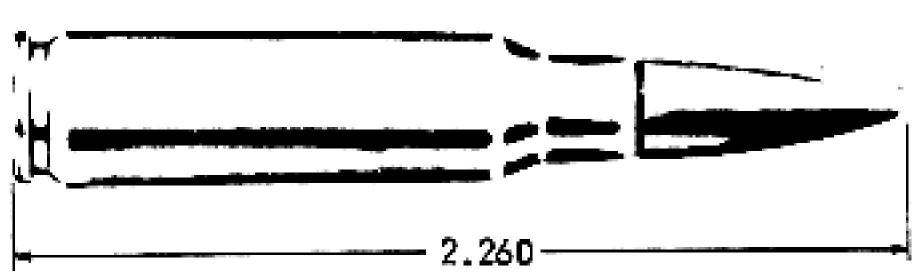
b. Blank cartridge, for simulated fire, in maneuvers, and in firing salutes.

c. Tracer cartridge, for observation of fire, incendiary effect, and signaling.

5-5. IDENTIFICATION.

5-6. GENERAL. The type, caliber, model, and ammunition lot number, including the symbol of the manufacturer are necessary for complete identification of small-arms ammunition. Ammunition for the 5.56-mm weapon is completely identified by its appearance, the painting of the bullet tip, and the markings on the packing containers.

5-7. STAMPING. Because of its small size, the marking on small-arms ammunition consists of the stamping of the manufacturer's initials and year of manufacture on the base of the cartridge case.



ORD D864

Figure 5-1. Cartridge, 5.56-MM, Ball, M193

5-8. TYPES. When removed from their original packing containers, the cartridges may be identified by physical characteristics as follows:

Type	Distinguishing Characteristics
Ball	Gilding metal or gilding metal clad steel jacket on bullet (no markings).
Blank	Not known - under development.
Tracer	Tip of bullet is painted orange for a distance of approximately 5/16 inch.

5-9. GRADES. Small-arms ammunition is graded primarily on the qualities which make the lot especially suited for use in a particular class of weapons; for example, a lot of ammunition assigned grade R is especially suited for use in rifles. Current grades of all existing lots of small-arms ammunition are established by the Army Materiel Command and are published in Department of the Army Technical Bulletin, TB 9-AMM-4. Only those lots of appropriate grade will be fired. Grade 3 indicates unserviceable ammunition that will not be issued or fired or cartridges for which the ammunition lot number has been lost. However, ammunition placed in grade 3 because of loss of ammunition lot number, but which can be identified as having been in serviceable lots issued to a specific organization, may be reissued after visual inspection, but only for local training purposes. When cartridges are removed from original packings, they should be marked or tagged so that the ammunition lot number may be preserved.

5-10. MODEL. To identify a particular design, a model designation is assigned at the time the item is classified as an adopted type. This model designation becomes an essential part of the standard nomenclature and is included in the marking on the packing container. The present system of model designation consists of the letter "M" followed by an arabic numeral;

for example, "M61". Modifications are indicated by adding the letter "A" and appropriate arabic numeral. Thus, "M61A" indicates the first modification of an item for which the original designation was "M61". Similarly, a system applied to development items involves the use of a "T" or "XM" designation to indicate the basic design and an "E" to indicate modifications thereof. Thus, "T102E1" would indicate the first modification of a development item originally designated "T102".

5-11. AMMUNITION LOT NUMBER. When ammunition is manufactured, an ammunition lot number, which becomes an essential part of the marking, is assigned in accordance with pertinent specifications. This lot number is marked on all packing containers. Since it is impracticable to mark the ammunition lot number of each cartridge, every effort should be made to maintain the ammunition lot number of cartridges removed from their original packings. Cartridges for which the ammunition lot number has been lost automatically are classified grade 3.

5-12. CARE, HANDLING, AND PRESERVATION.

a. Ammunition for the 5.56-mm rifle (small-arms), as compared with other types of ammunition, is not dangerous to handle.

b. Ammunition is packed to withstand conditions ordinarily encountered in the field. Care must be observed to keep packings from becoming broken or damaged. All broken packings must be repaired immediately and careful attention given to the transfer of all markings to the new parts. The ammunition may be packed in metal-lined wooden boxes or metal boxes. If the damaged box contains a metal liner, it should be air-tested and sealed, providing that equipment for this work is available.

c. When necessary to store ammunition in the open, raise it on dunnage at least six inches from the ground and protect it with paulin or other cover, leaving enough space for the circulation of air. Where practicable, dunnage strips should be placed under each layer of boxes. Suitable trenches should be dug to prevent water from running under the pile.

d. Since ammunition and explosives are adversely affected by moisture and high temperature, due consideration should be given to (1) and (2) below.

(1) Do not open boxes until ammunition is to be used. Ammunition removed from airtight containers, particularly in damp climates, is apt to corrode, thereby rendering the ammunition unserviceable.

(2) Protect ammunition from high temperature and direct rays of the sun. More uniform firing is obtained if rounds are at the same temperature. The combination of high temperatures and a humid atmosphere is particularly detrimental to the stability of the propellant and to tracer mixtures in tracer ammunition.

e. Do not attempt to disassemble the cartridge or any of its components.

f. The use of oil or grease on cartridge is prohibited.

g. Ammunition should be protected from sand, mud, moisture, frost, snow, ice, grease, and other foreign matter. If it gets wet or dirty, it should be wiped off at once. If corrosion forms on the cartridges, it should be wiped off with a clean dry cloth. However, cartridges should not be polished to make them look better or brighter.

h. Brass cartridge cases are easily dented and should be protected from hard knocks or blows. Dented cartridge cases may cause incomplete obturation, jamming in the chamber, and difficulty in extraction.

i. Ammunition, when stored, should be segregated by caliber, type, and ammunition lot number.

j. When only a part of a box of ammunition is used, the ammunition remaining in the box should be protected against unauthorized handling and use by firmly fastening the box cover in place.

5-13. AUTHORIZED ROUNDS.

5-14. The ammunition authorized for use in the 5.56-mm rifles M16 and XM16E1 is listed in table 5-1. Standard nomenclature, which is used in the listing, completely identifies each item except for ammunition lot number. Only authorized cartridges will be used in the weapon; unauthorized assembly and use of cartridges are extremely dangerous. Ordinarily, issue of this ammunition is in proportion by types to meet tactical requirements, so that substitution of unauthorized rounds in the field is not required.

TABLE 5-1 AUTHORIZED ROUNDS

Standard Nomenclature	Complete round		Projectile	
	Length (in.)	Weight (grains) (approx)	Length (in.)	Weight (grains) (approx)
CARTRIDGE, 5.56-MILLIMETER: ball, M193	2.26	179	0.755	55
*CARTRIDGE, 5.56-MILLIMETER: blank, XM200				
*CARTRIDGE, 5.56-MILLIMETER: tracer, XM196				

* Items are under development.

5-15. PREPARATION FOR FIRING.

5-16. After removal from packing materials, cartridges for this weapon are ready for firing. Cartridges prepared for firing, but not fired, will be returned to their original packings or packed in suitable packing boxes. The packing boxes should be appropriately marked to indicate the nomenclature of the cartridges, the quantity of cartridges therein, and the appropriate ammunition lot number. Such cartridges will be used first in subsequent firings in order that stocks of opened packings may be kept at a minimum.

5-17. PRECAUTIONS IN FIRING.

5-18. The precautions in "a" through "k" below should be closely observed in order to prevent injury to personnel or damage to materiel.

a. The cartridges should be free of sand, mud, moisture, frost, snow, ice, grease, or other foreign matter before loading into the magazine.

b. Ammunition which is seriously corroded should not be fired.

c. Brass cartridge cases are easily dented and should be protected from hard knocks and blows. Dented cartridge cases may cause incomplete obturation, jamming in the chamber and difficulty in extraction.

d. Cartridges which have been seriously damaged, or those having loose bullets, should not be used.

e. Before firing, blank cartridges should be visually inspected for evidence of any foreign matter within the cartridge case mouth. Any foreign matter therein would be expelled as a projectile in firing.

f. Blank cartridges should not be fired at a representative enemy at distances less than 20 feet. The unburned propellant grains may cause injury within this distance.

g. Ammunition should not be fired unless it has been identified by ammunition lot number and the grade.

h. Do not fire cartridges which have become overheated due to exposure to the direct rays of

the sun or other sources of high temperature. Such cartridges, if fired, may develop hazardous chamber pressures.

i. If, at the time firing is interrupted, a cartridge is in the chamber of a very hot weapon, the cartridge should be removed promptly to prevent the possibility of a cook-off.

j. Misfires and hangfires will be handled as indicated in par. 3-16 through 3-18. Specific instructions, for M16 and XM16E1 rifle, are to wait ten seconds from the failure to fire before retracting bolt to remove the round.

5-19. PACKING AND MARKING.

5-20. **PACKING.** The individual cartridges for this weapon are packed in cartons (table 5-2). The cartridges are then packed into metal boxes in wirebound wooden boxes.

5-21. Refer to applicable manuals for marking instructions.

TABLE 5-2 PACKING DATA FOR 5.56-MM AMMUNITION

	Volume (cu ft)	Weight (lb)
Packed 20/carton, 36 carton (720)/per metal box M2A1, 2 box (1440 cartridge)/wire-bound box. Dimensions of box; 14-1/2 x 12-3/4 x 8-3/8	0.85	59.0

CHAPTER VI
DESTRUCTION OF MATERIAL TO PREVENT ENEMY USE

6-1. GENERAL.

6-2. Destruction of the 5.56-mm rifles M16 and XM16E1 when subject to capture or abandonment in the combat zone, will be undertaken by the using arm only when, in the judgement of the unit commander concerned, such action is necessary in accordance with orders of, or policy established by, the Army Commander or Air Force Commander.

6-3. The information which follows is for guidance only. Certain of the procedures outlined require the use of explosives and incendiary grenades which normally may not be authorized items of issue to the using organization. The issue of these and related materials, and the conditions under which destruction will be affected, are command decisions in each case, according to the tactical situation. Of the several means of destructions, those most generally applicable are:

Mechanical ------ Requires axe, pick mattock, sledge, crowbar, or similar implement.

Burning --------- Requires gasoline, oil, incendiary grenades, or other flammables, or welding or cutting torch.

Demolition ------- Requires suitable explosives or ammunition. (See note.)

Gunfire ---------- Includes artillery, machine guns, rifles using rifle grenades, and launchers using antitank rockets. Under some circumstances hand grenades may be used. (See note.)

Disposal -------- Requires burying in the ground, dumping in streams or marshes, or scattering so widely as to preclude recovery of essential parts.

Note

Generally applicable only when the rifle is to be destroyed in conjunction with other equipment.

In general, destruction of essential parts followed by burning will usually be sufficient to render the rifle useless. However, selection of the particular method of destruction requires imagination and resourcefulness in the utilization of the facilities at hand under the existing conditions. Time is usually critical.

6-4. If destruction to prevent enemy use is resorted to, the rifle must be so badly damaged that it cannot be restored to a usable condition in the combat zone either by repair or cannibalization. Adequate destruction requires that all parts essential to the operation of the rifle, including essential spare parts, be destroyed or damaged beyond repair. However, when lack of time and personnel prevents destruction of all parts, priority is given to the destruction of those parts most difficult to replace. Equally important, the same essential parts must be destroyed on all like materiel so that the enemy cannot construct one complete unit from several damaged ones.

6-5. If destruction is directed, due consideration should be given to observance of appropriate safety precautions.

6-6. DESTRUCTION OF THE 5.56-MM RIFLES M16 AND XM16E1.

6-7. METHOD NO. 1 -- BY MECHANICAL MEANS.

6-8. Using an axe, pick mattock, sledge, or other heavy implement, destroy the rifle by smashing the receiver groups, front and rear sights, trigger and trigger guard, magazine, stock, and controls. Also bend the barrel of the rifle and cut the sling into several pieces. Elapsed time: about 3 minutes.

6-9. METHOD NO. 2 -- BY BURNING.

a. Place the rifle on a suitable pile of combustible material. Pour gasoline or oil over the rifle and the combustible material. Ignite and take cover. A hot fire is required to render the rifle useless. Elapsed time: about 3 minutes.

WARNING

When igniting gasoline, due consideration should be given to the highly flammable nature of gasoline and its vapor. Carelessness in its use may result in painful burns.

b. If a welding or cutting torch is available, burn through the barrel and receiver assembly. Destroy the stock and sling as described in paragraph 6-8 above.

6-10. METHOD NO. 3 -- BY DISPOSAL.

6-11. Bury the rifle in a suitable hole or dump it into a stream. Elapsed time: about 3 minutes.

CHAPTER VII
INSPECTIONS

SECTION 1
GENERAL

7-1. SCOPE.

7-2. This chapter provides specific instructions for the inspection by maintenance personnel of materiel in the hands of troops in the field, in maintenance shops, and in alerted units scheduled for oversea duty. Trouble shooting information is incorporated wherever applicable as a normal phase of inspection.

7-3. PURPOSE OF INSPECTION.

7-4. Inspections are made for the purpose of (1) determining the condition of an item as to serviceability, (2) recognizing conditions that would cause failure, (3) assuring proper application of maintenance policies at prescribed levels, and (4) determining the ability of a unit to accomplish its maintenance and supply missions.

7-5. CATEGORIES OF INSPECTION.

7-6. In general, three categories of inspection are performed by direct and general maintenance personnel. (Par. 7-7, 7-8 and 7-9).

7-7. INSPECTION OF MATERIEL IN THE HANDS OF TROOPS IN THE FIELD.

a. SPOT-CHECK INSPECTION. This is an inspection performed on a percentage of materiel in order to ascertain the adequacy and effectiveness of organizational maintenance and supply. Included within this scope is inspection of equipment to detect incipient failures before unserviceability occurs; inspection to ascertain the availability and use of technical and supply manuals and lubrication instructions; inspection to determine the accuracy of records, authorized levels of equipment and supplies, practice of supply economy, preservation, and knowledge of the proper procedures for requisitioning supplies and equipment and follow-up thereon.

b. COMMAND MAINTENANCE. (Army) Command maintenance inspections will be performed, at least, annually. The purpose of the inspection is to ascertain the serviceability of equipment, to predict maintenance and supply requirements, and to determine the adequacy of facilities and effectiveness of procedures. Information obtained during the inspection should indicate future requirements for maintenance and for replacement, as well as disclose immediate needs for maintenance and application of modification work orders. During inspection, correction of deficiencies will be made on the spot when practical. For additional information relative to these inspections and the forms to be used therewith, refer to AR 750-8.

7-8. SHOP INSPECTION.

a. INITIAL INSPECTION. This is an inspection of materiel received in maintenance shops for purpose of determining the degree of repair and parts requirement. This includes determination of modification work orders or TCTO's to be applied.

b. IN-PROCESS INSPECTIONS. These are inspections performed in the process of repairing the materiel, to insure that all parts conform to the prescribed repair standards, that the workmanship is in accordance with approved methods and procedures, and that deficiencies not disclosed by the initial inspection are found and corrected.

c. FINAL INSPECTION. This is an acceptance inspection performed by a final inspector after repairs have been completed, to insure that the materiel is acceptable for return to user or for return to replacement stock according to the standards established.

7-9. PREEMBARKATION INSPECTION.

7-10. This inspection is conducted on materiel in alerted units scheduled for oversea duty to insure that such materiel will not become unserviceable or worn out in a relatively short time. It prescribes a higher percentage of remaining usable life in serviceable materiel to meet a specific need beyond minimum serviceability.

SECTION 2
INSPECTION PROCEDURES

7-11. GENERAL.

WARNING

Before starting an inspection, be sure to clear the rifle. Do not actuate the trigger until the rifle has been cleared. Inspect the chamber to insure that it is empty and check to see that no ammunition is in position to be introduced. Avoid having live ammunition in the vicinity of the work area.

7-12. Check to see that the rifle has been cleaned of all grease, oil, dirt, or foreign matter which might interfere with proper functioning or obscure the true condition of the parts.

7-13. INSPECTION PRIOR TO DISASSEMBLY.

7-14. VISUAL INSPECTION. Make an overall inspection of the rifle for general appearance, condition and operation.

7-15. INITIAL INSPECTION. Initial inspection performed upon receipt of materiel turned in for repair determines the extent of repair required and provides the basis for procuring the parts, assemblies, or supplies necessary to accomplish the repair.

7-16. FUNCTIONAL INSPECTION. Refer to paragraph 3-29. Do not use live cartridges.

CHAPTER VIII
REPAIR OPERATIONS

SECTION 1
TROUBLE SHOOTING

8-1. GENERAL.

8-2. The information contained in this manual is to aid personnel whose responsibility it is to restore worn, damaged, or inoperative equipment to satisfactory condition. This information includes both determination of cause (trouble shooting) and corrective action.

8-3. All repair maintenance shall be done with standard service equipment by all personnel trained in the use of such equipment, using techniques in accordance with procedures in applicable regulations. Personnel using this section of the manual shall have acquired basic skills in trouble shooting, i.e., inspections and analysis of symptoms.

8-4. TROUBLE SHOOTING PROCEDURES.

8-5. USE OF ILLUSTRATIONS. Illustrations in this manual provide information on placement and identification. Be familiar with normal appearance and placement of the various components and their associated connections.

8-6. INTERNAL AND EXTERNAL TROUBLES. When a malfunction is observed, insure that all operating procedures have been followed exactly as specified, decide if the cause can be identified and the trouble eliminated without dismantling the equipment.

8-7. USE OF THE TROUBLE SHOOTING TABLE. The table of trouble shooting information is designed to aid in locating and correcting malfunctions. Find the trouble that has developed in the first column; then find the cause in the probable cause column. Follow over to the right in the remedy column and take necessary action to correct malfunction.

Table 8-1. Trouble Shooting

Malfunction	Probable cause	Remedy
Bolt fails to lock to the rear after the last round.	1. Faulty magazine. 2. Broken bolt catch and/or spring.	Replace magazine. Replace bolt catch and/or spring.
Failure to feed.	1. Faulty magazine. 2. Binding bolt and bolt carrier in locked position.	Replace magazine. Disassemble and clean (On a new weapon, one or two drops of oil on the bolt rings may remedy this trouble).
	3. Restricted action spring guide assembly	Remove action spring and action spring guide assembly and clean.
Failure to cycle with safety set at automatic.	1. Broken automatic sear or spring. 2. Faulty selector lever. 3. Frozen ejector.	Replace automatic sear assembly. Replace selector lever. Disassemble and clean.

Table 8-1. Trouble Shooting - (Continued)

Malfunction	Probable cause	Remedy
Failure to fire.	1. Improper assembly of firing pin. 2. Broken hammer spring. 3. Broken disconnector or spring. 4. Misalined or worn trigger or hammer spring. 5. Improperly installed hammer or trigger spring.	Reinstall firing pin and check firing pin retaining pin for damage. Replace hammer spring. Replace disconnector or spring. Replace trigger or hammer spring. Disassemble and install properly.
Fires with selector lever on SAFE.	1. Faulty selector lever. 2. Faulty or misalined trigger pin. 3. Faulty hammer or trigger.	Replace selector lever. Replace trigger pin. Replace hammer or trigger.
With selector lever on SEMI, fires when trigger is released.	1. Faulty or misalined trigger pin. 2. Faulty hammer or trigger.	Replace trigger pin. Replace hammer or trigger.
Bolt seizes, will not rotate.	Carbon dirty or burred bolt group.	Hold rifle in vertical position and strike butt <u>sharply</u> on ground, while pulling back on charging handle. **CAUTION** Strike butt squarely on ground to prevent breakage of stock. Remove bolt group and clean.

SECTION 2
DISASSEMBLY AND ASSEMBLY

8-8. GENERAL.

8-9. This section contains instructions on disassembly and assembly.

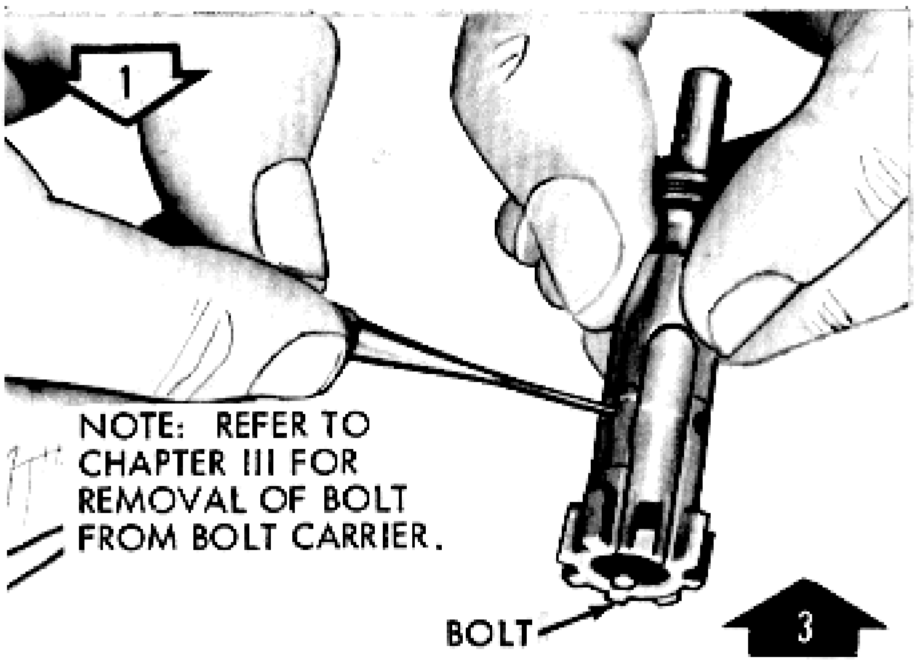
Note

The number in the upper left-hand corner of illustration gives the sequence of disassembly.

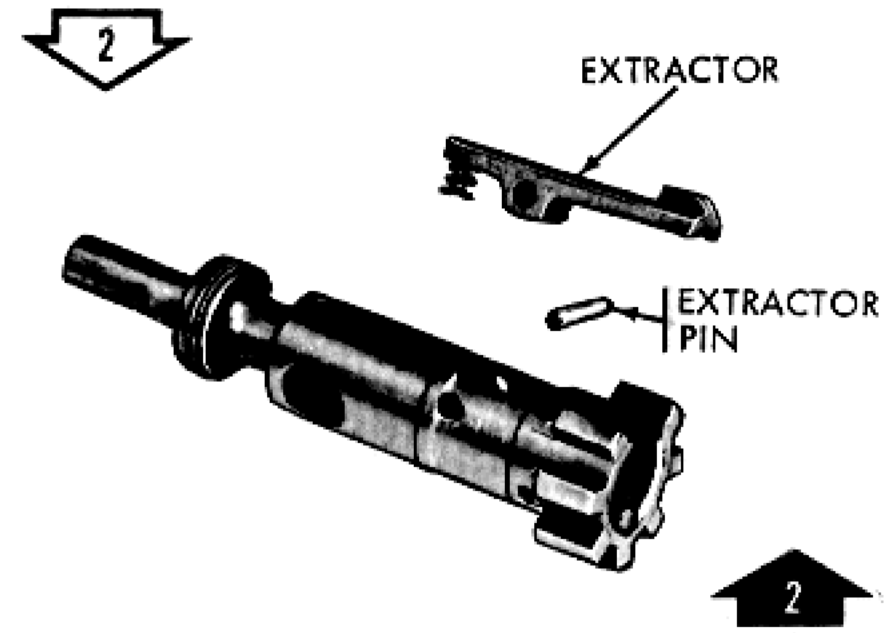
Note

The number in the lower right-hand corner of illustration gives the sequence of assembly.

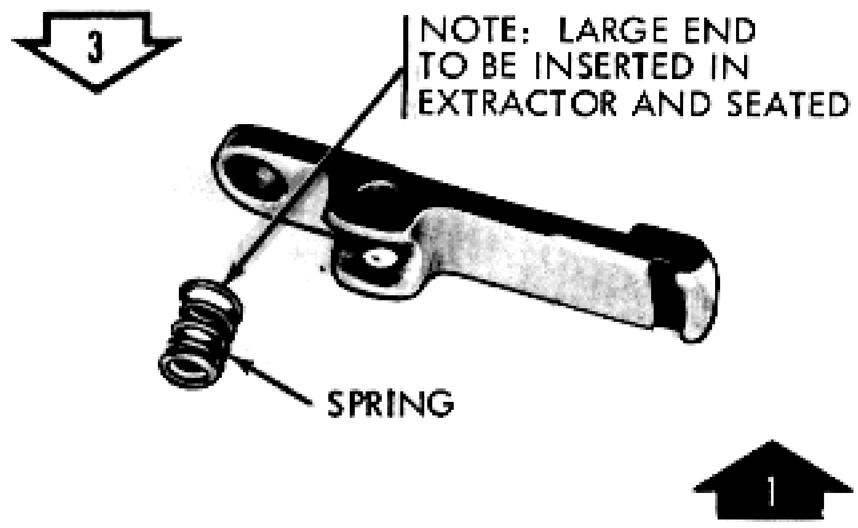
The rifle is composed of three groups: bolt carrier group, lower receiver group, and upper receiver group (figure 3-4). Disassembly and assembly for operator is covered in chapter III.



Remove/Install extractor pin.



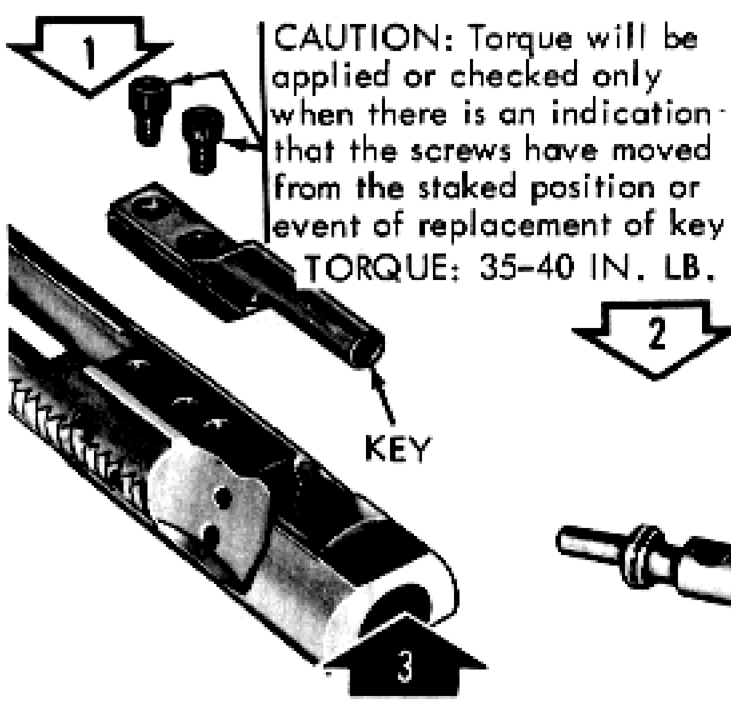
Remove/Install extractor.



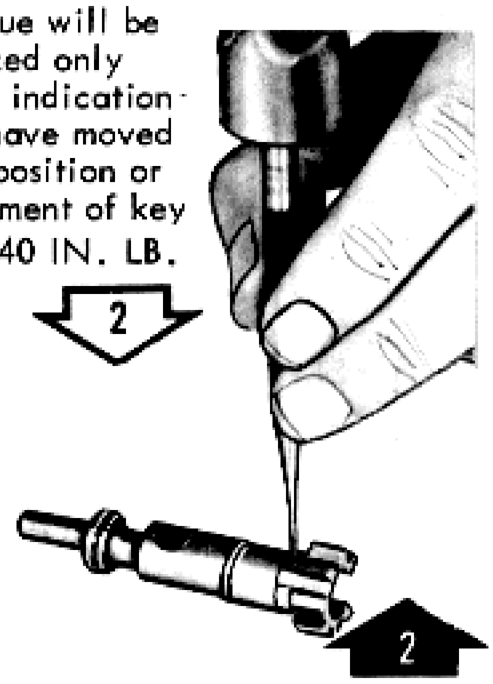
Remove/Install extractor spring.

ORD F8160

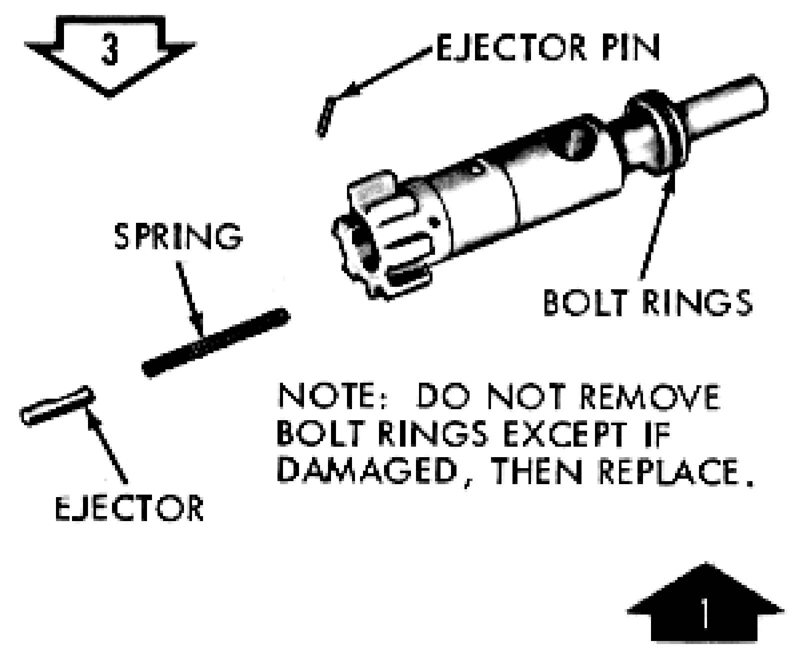
Figure 8-1. Organizational Disassembly/Assembly



Remove/Install bolt carrier key.



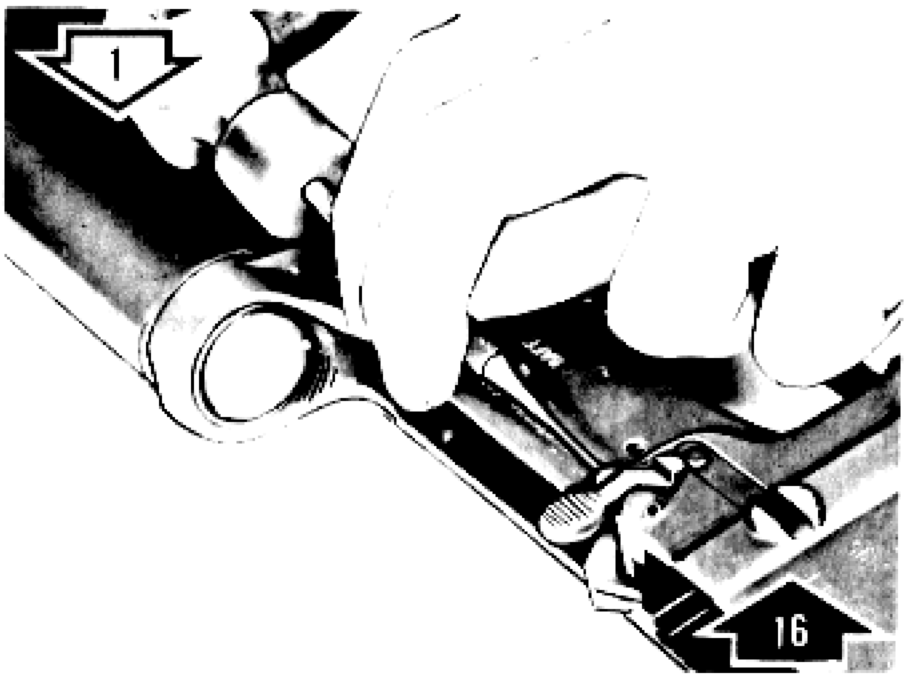
Remove/Install ejector pin.



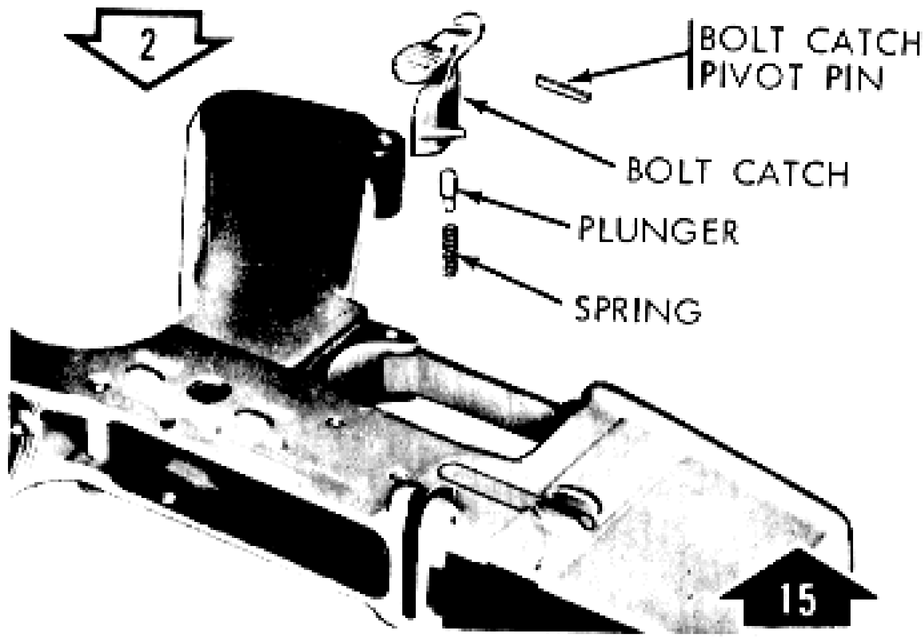
Remove/Install ejector and ejector spring.

ORD F9065

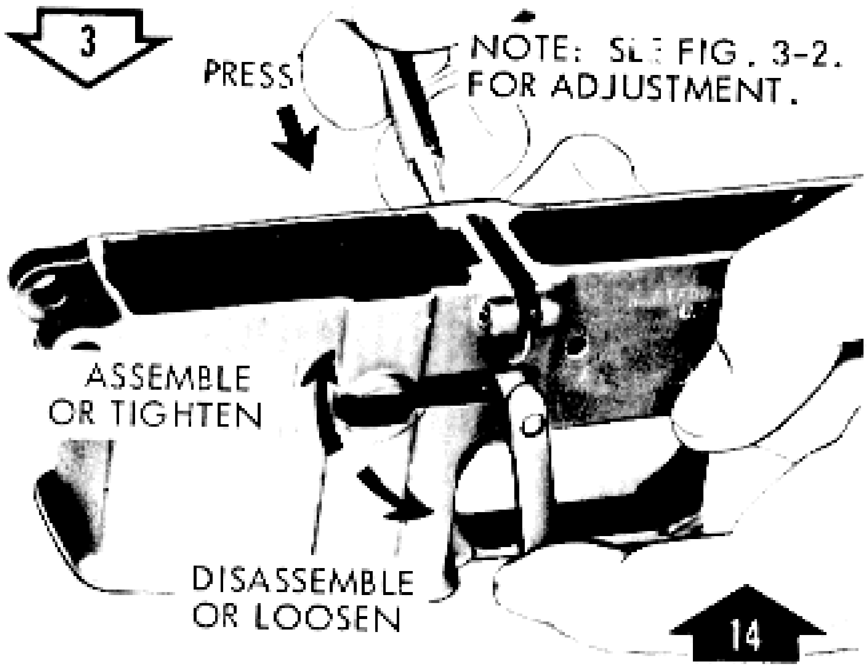
Figure 8-2. Direct Support Maintenance Disassembly/Assembly Bolt Carrier Group



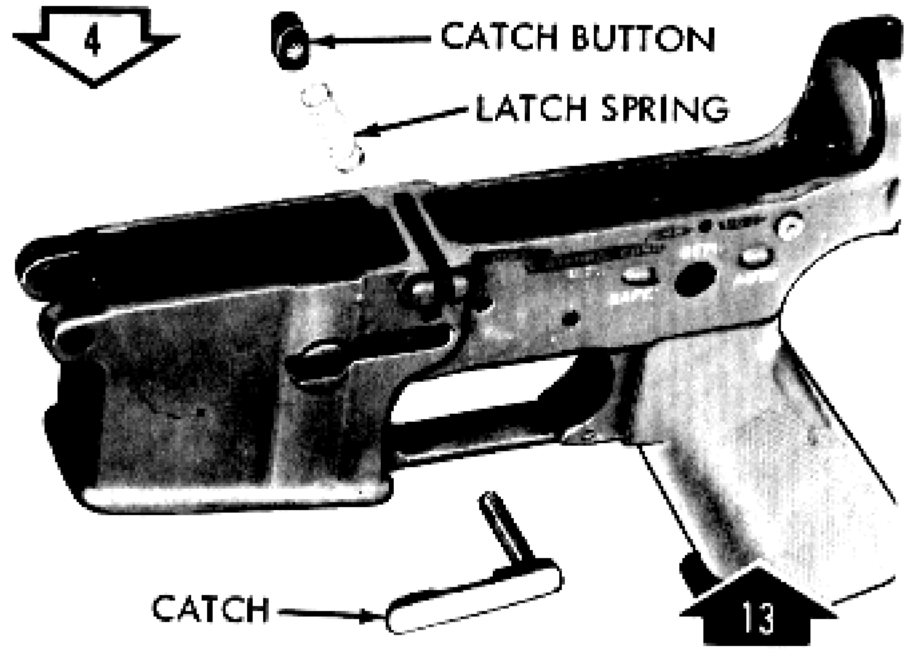
Remove/Install bolt catch pivot pin



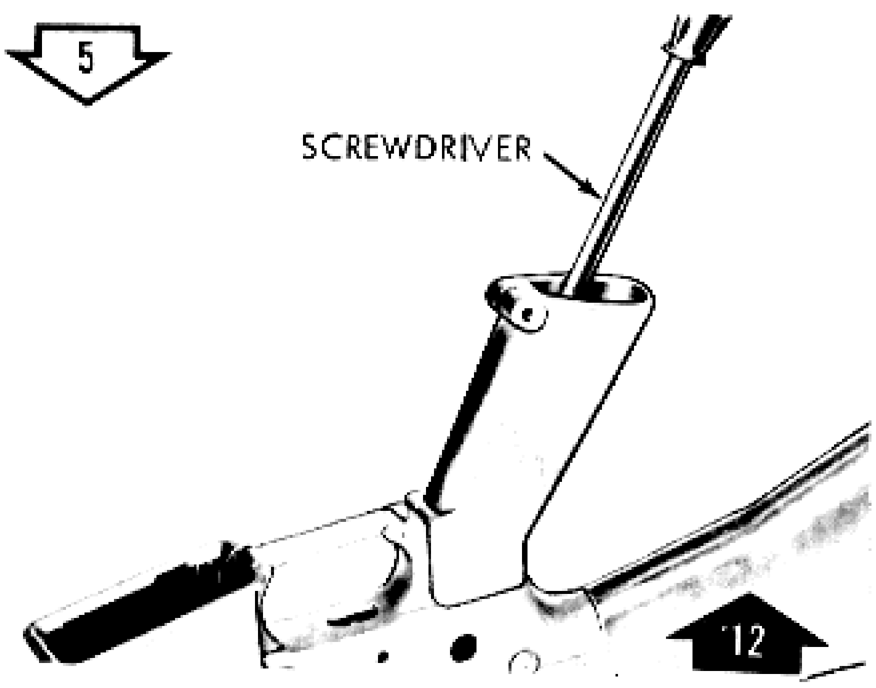
Remove/Install bolt catch, bolt catch plunger, and bolt catch spring.



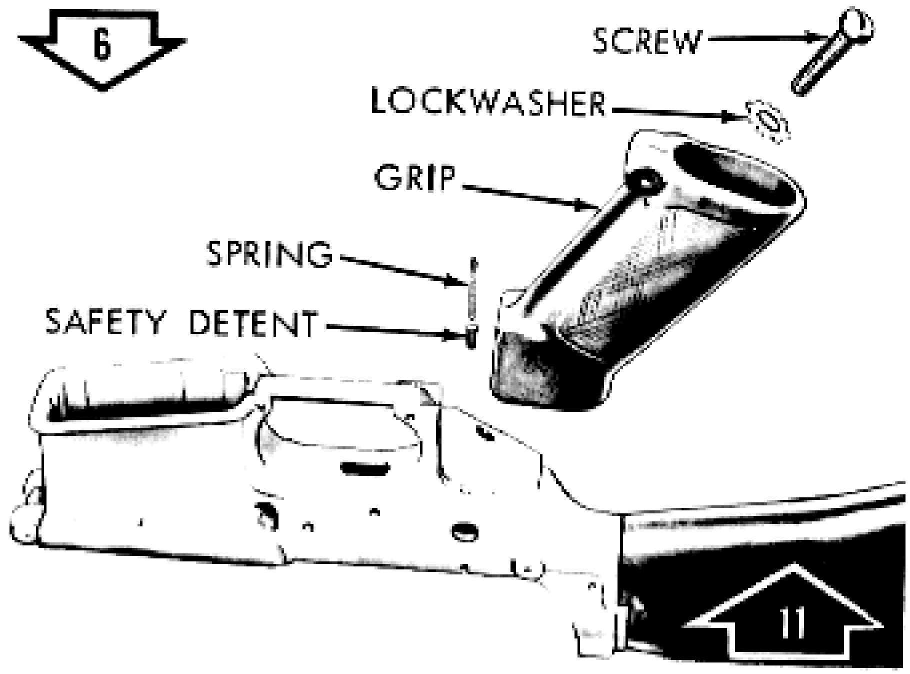
Remove/Install magazine catch.



Remove/Install magazine catch button, and magazine catch spring.



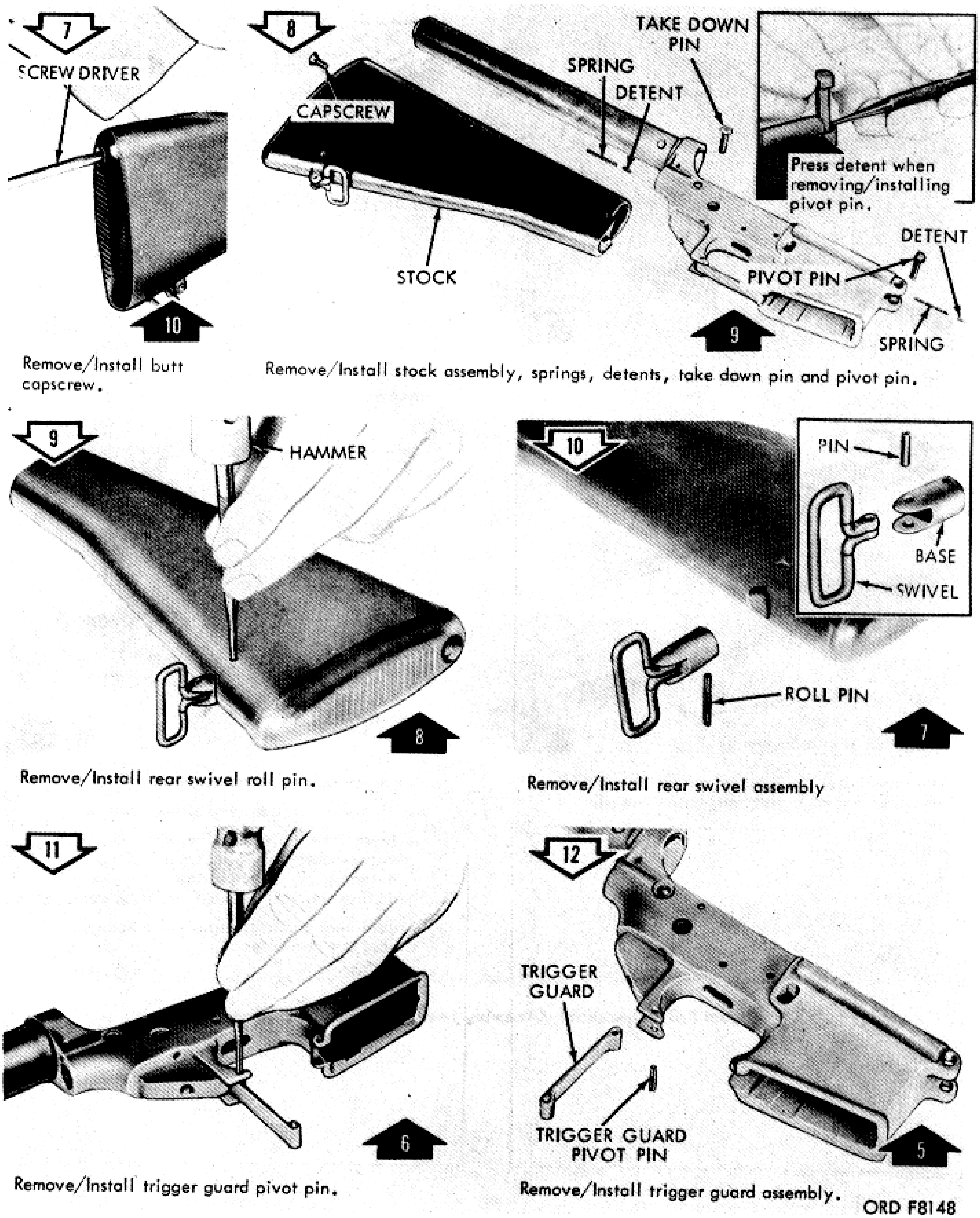
Remove/Install pistol grip screw.



Remove/Install lockwasher, pistol grip, safety detent and safety detent spring (ejector spring).

ORD F8147

Figure 8-3. Disassembly/Assembly Lower Receiver Group (Page 1 of 3)



Remove/Install butt capscrew.

Remove/Install stock assembly, springs, detents, take down pin and pivot pin.

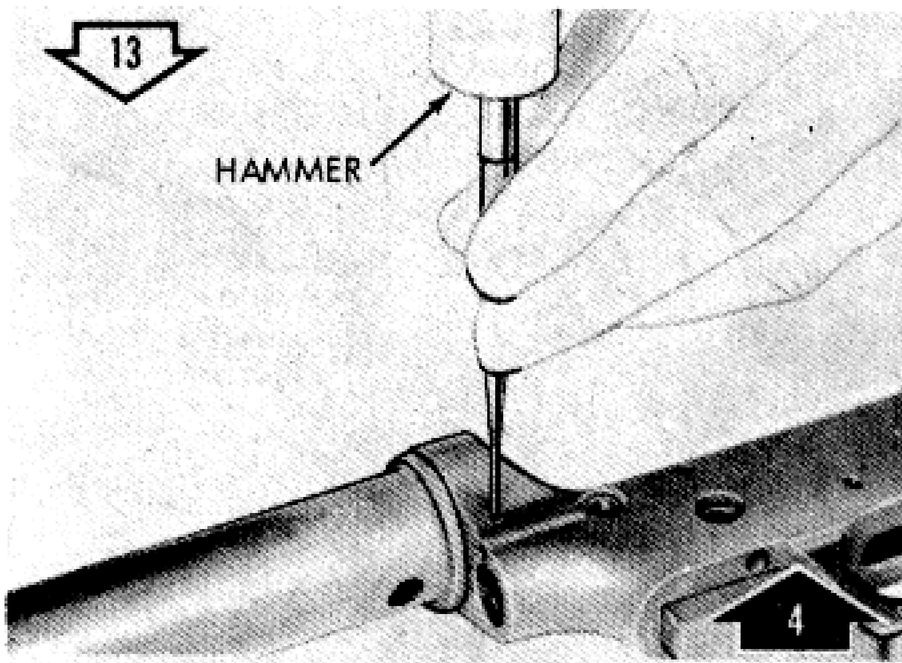
Remove/Install rear swivel roll pin.

Remove/Install rear swivel assembly

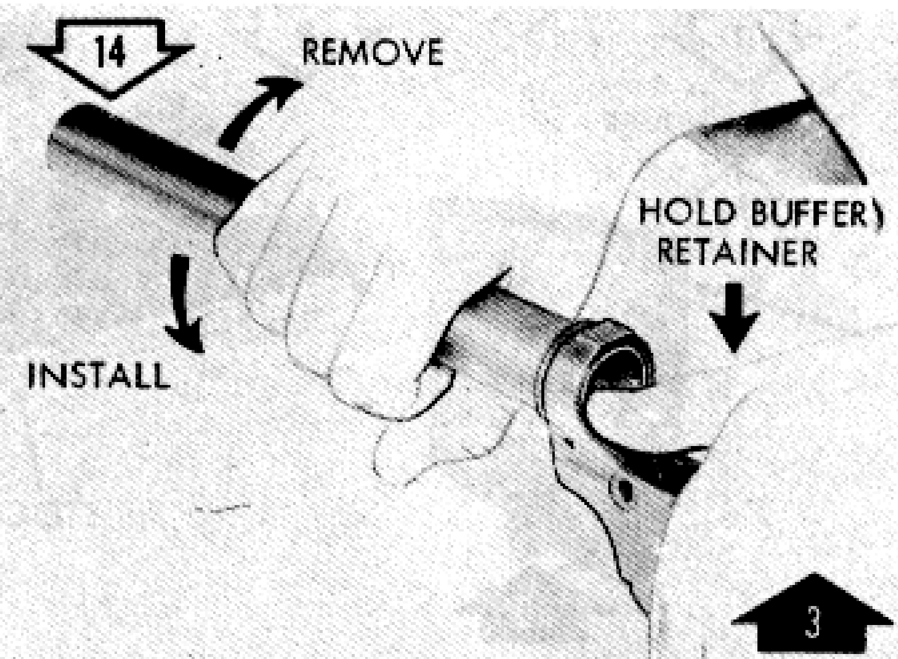
Remove/Install trigger guard pivot pin.

Remove/Install trigger guard assembly.

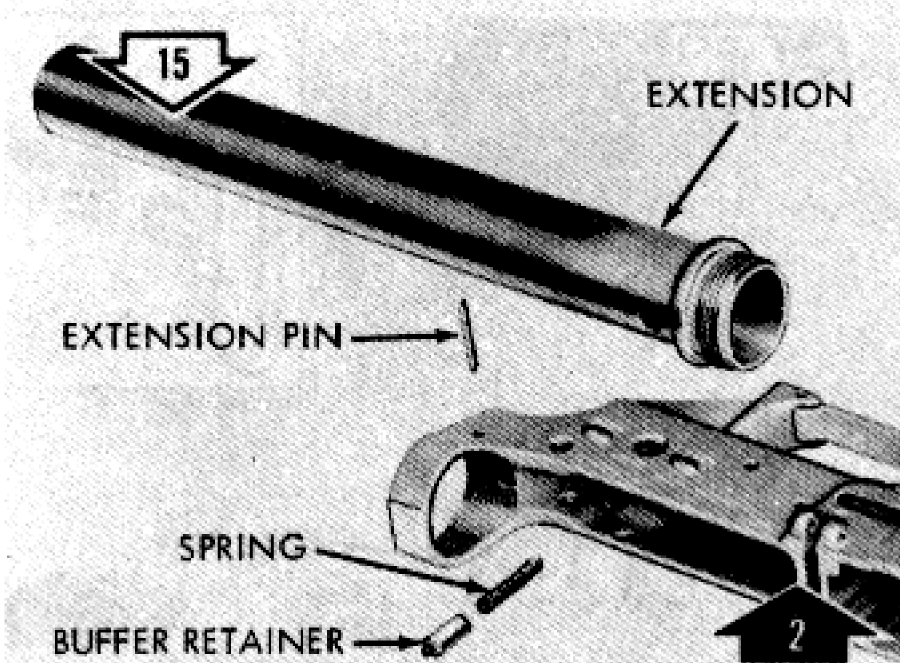
Figure 8-3. Disassembly/Assembly Lower Receiver Group (Page 2 of 3)



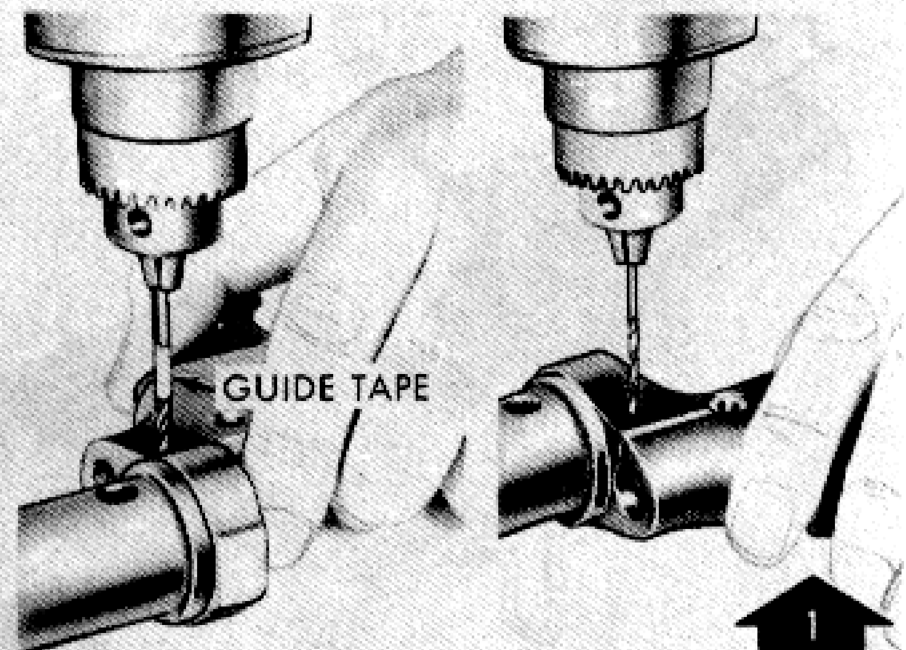
Remove/Install lower receiver extension pin.



Remove/Install lower receiver extension from/to receiver.



Remove/Install lower receiver extension, buffer retainer and buffer retainer spring from/to receiver.

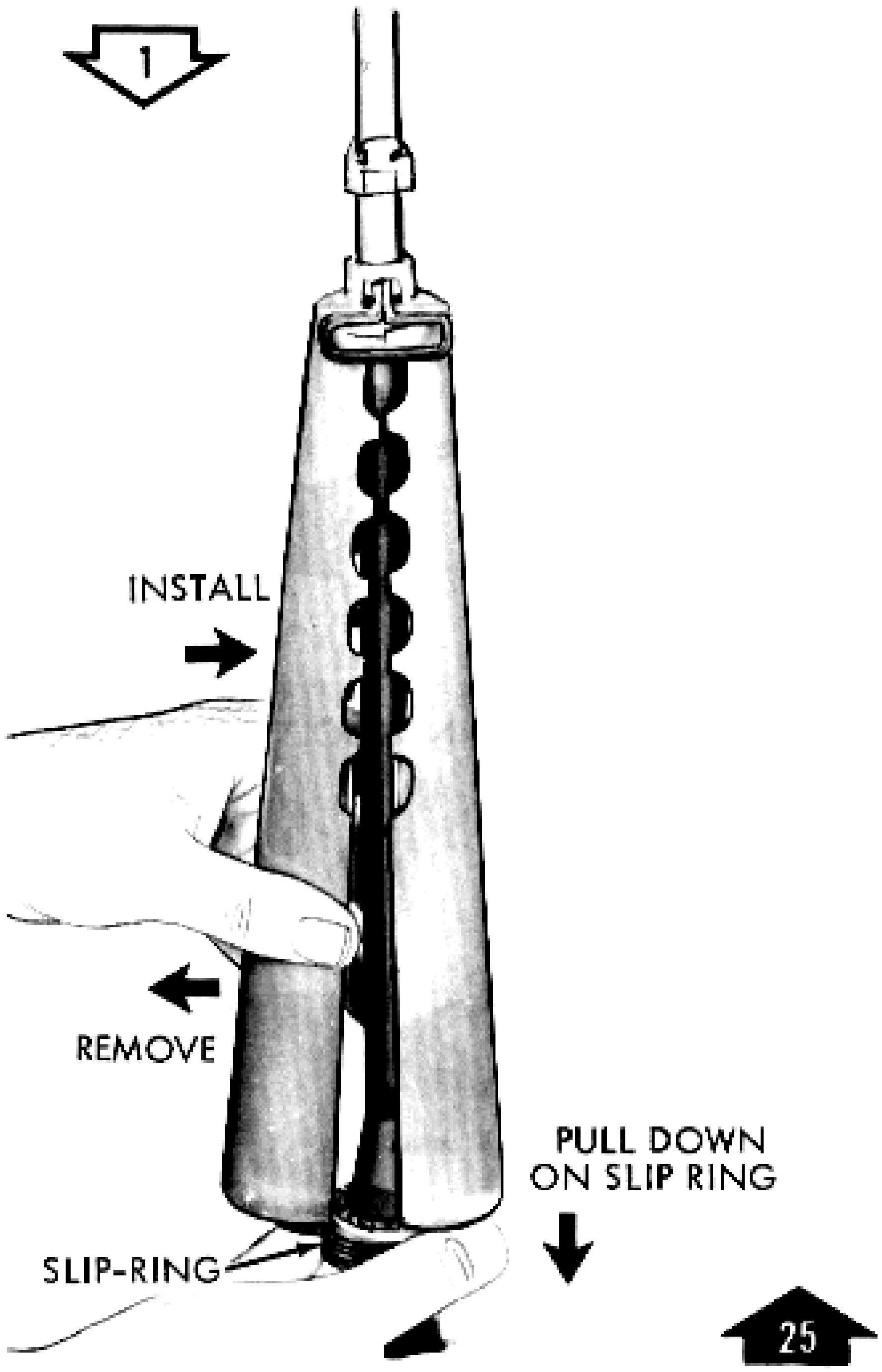


Replacing new receiver extension.

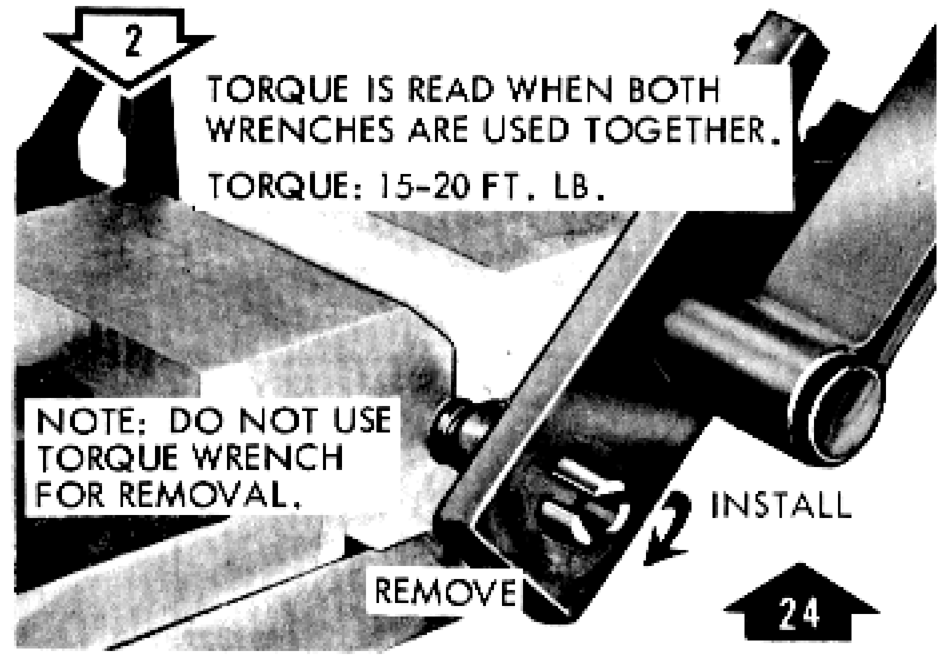
1. Tighten extension securely in receiver.
2. Using receiver as a guide, drill (3/32 drill) approximately 7/16 in. into receiver and extension. (A piece of tape may be put on drill as a guide for the 7/16 in. dimension).
3. Turn over and drill completely through receiver and extension.

ORD F8129

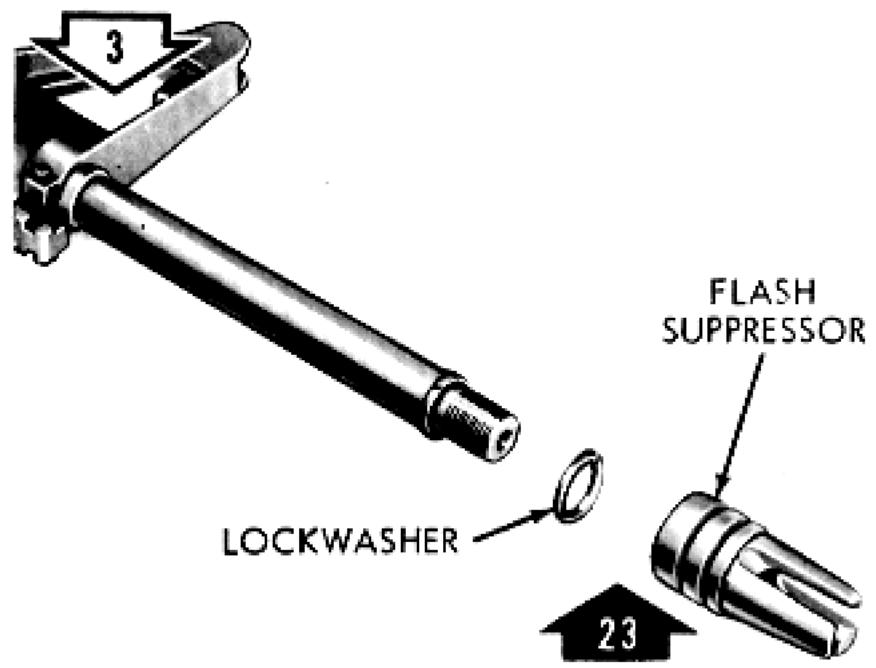
Figure 8-3. Disassembly/Assembly Lower Receiver Group (Page 3 of 3)



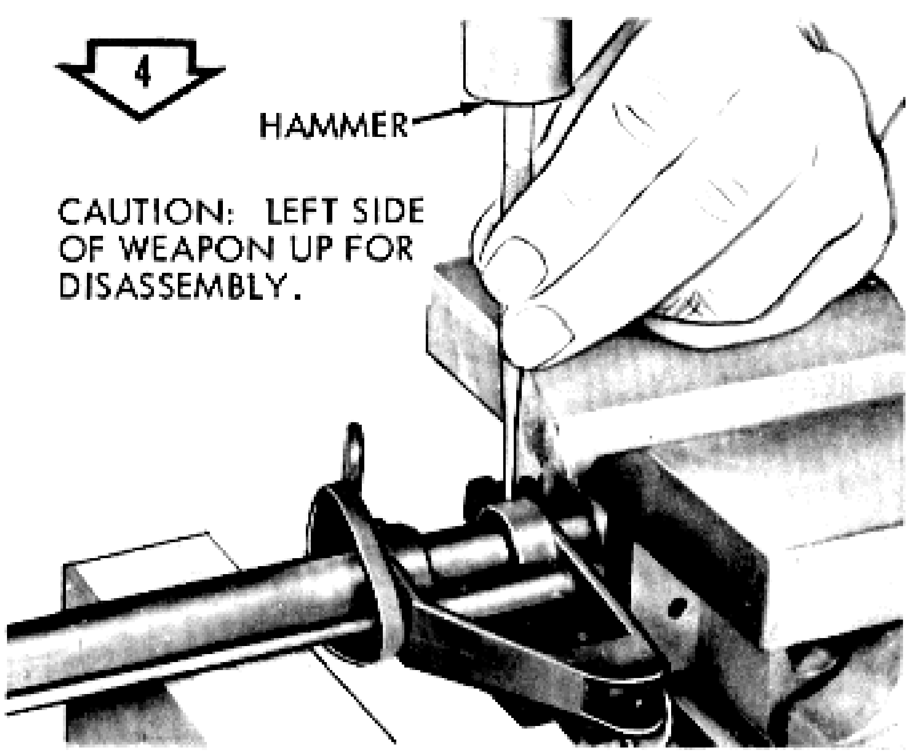
Remove/Install handguards.



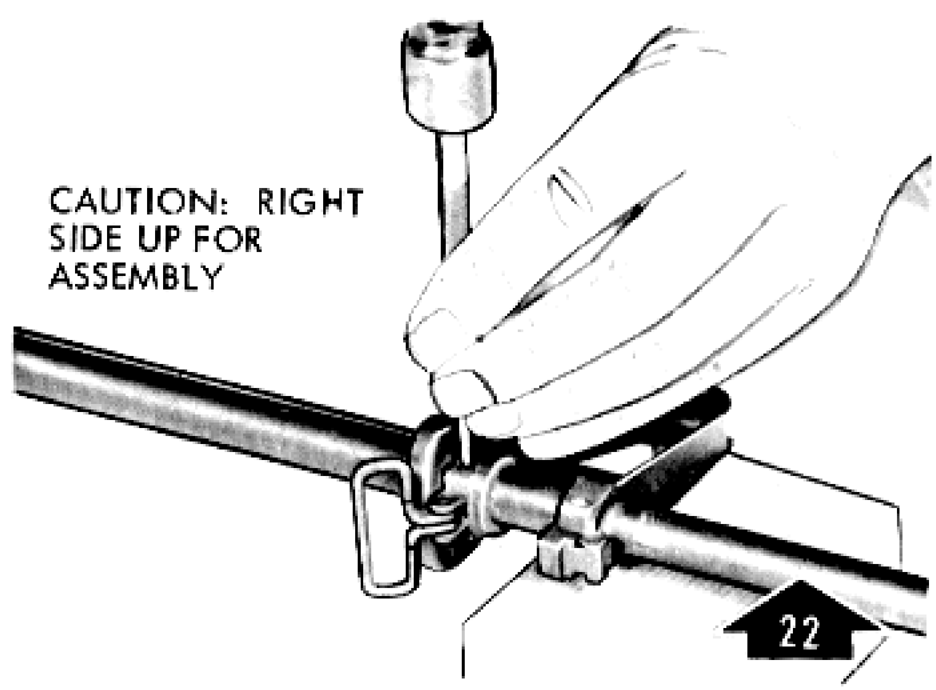
Remove/Install flash suppressor.



Remove/Install lockwasher.



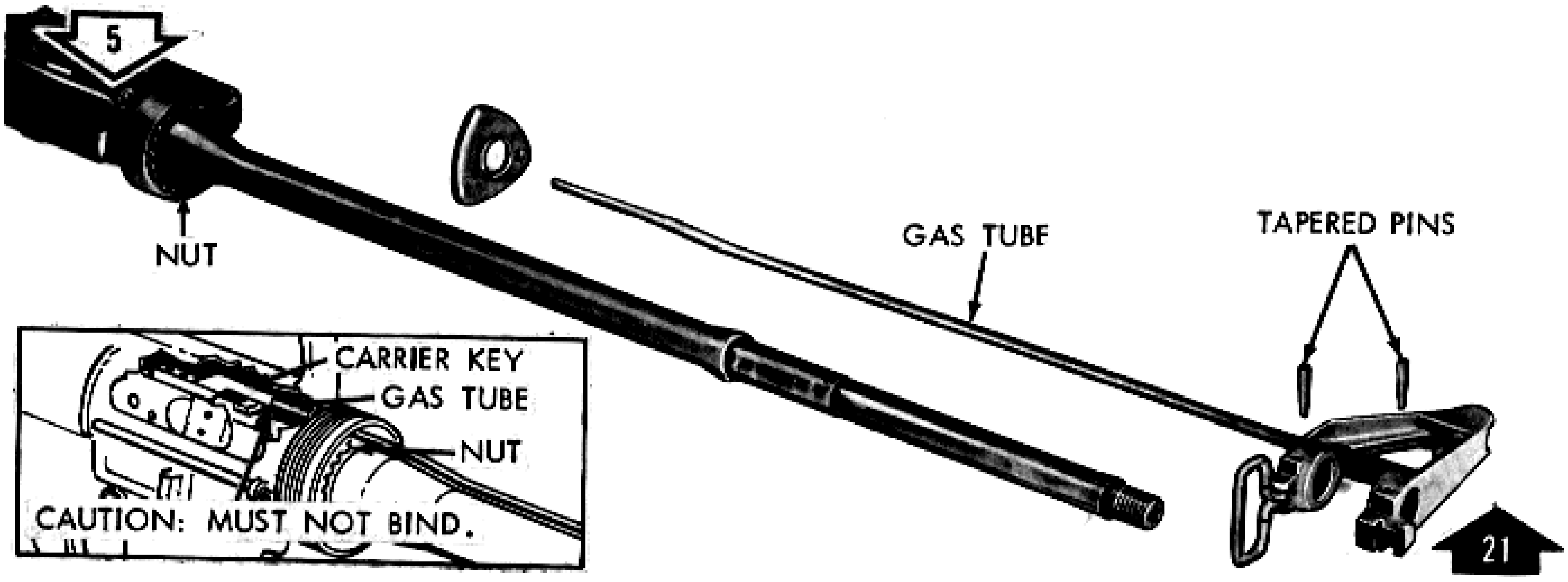
Remove front sight taper pins (from left side to right).



Install front sight taper pins.

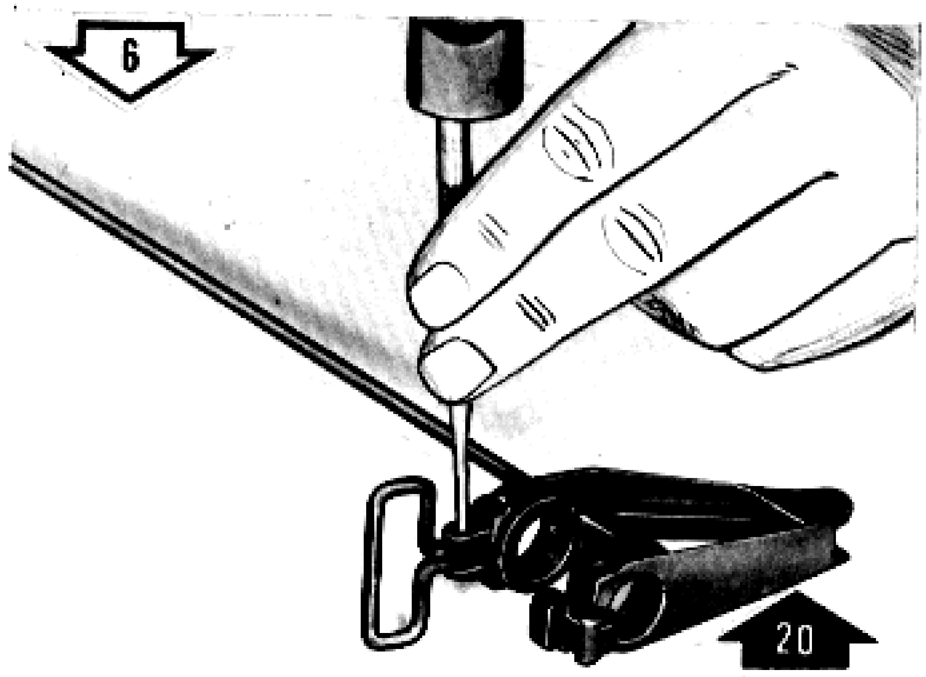
ORD F8149

Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 1 of 6).

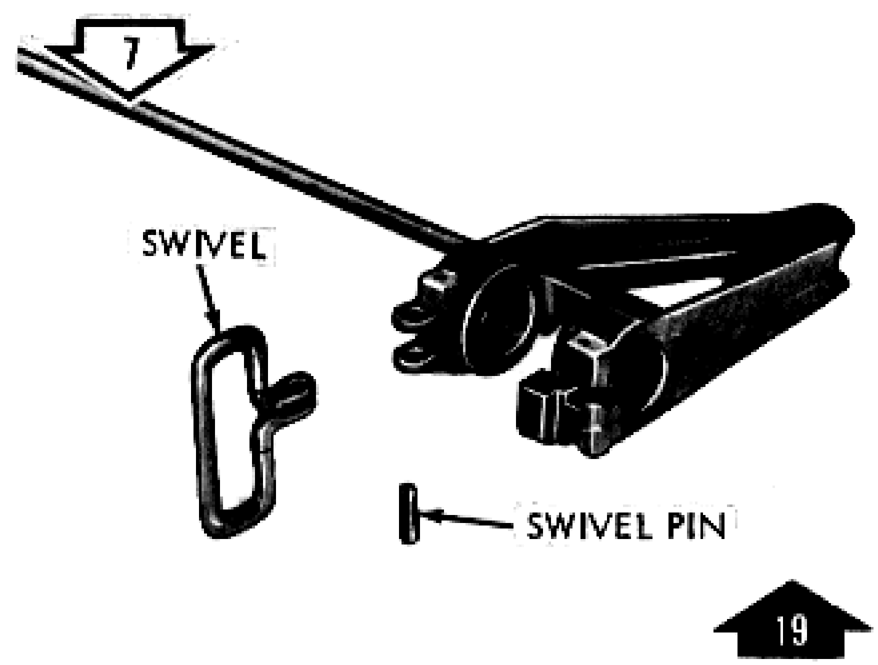


Remove/Install front sight and gas tube.

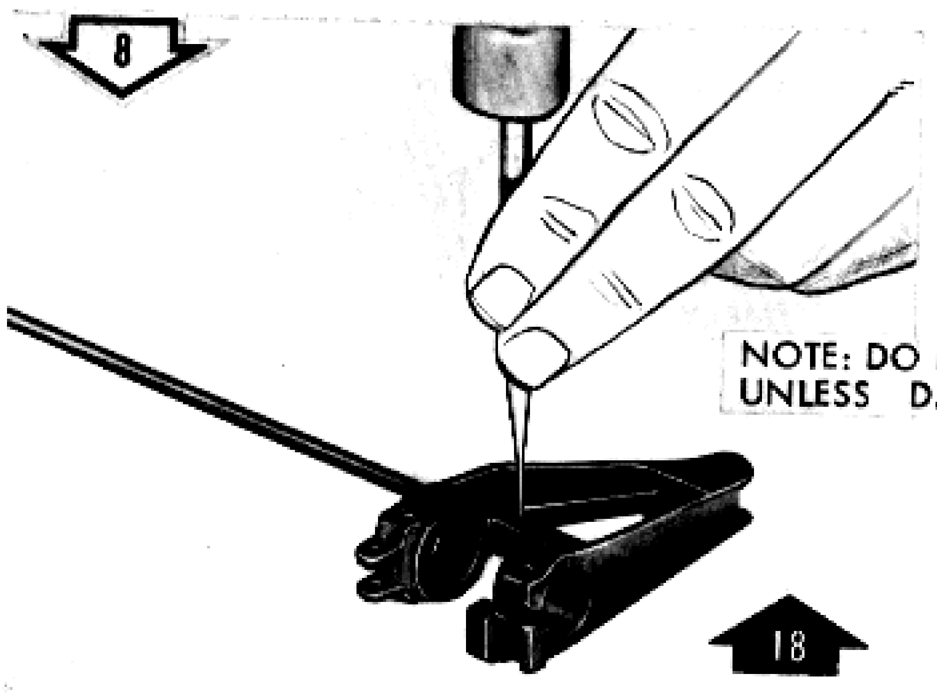
NOTE: WHEN INSTALLING GAS TUBE, THERE SHALL BE FREE MOVEMENT OF GAS TUBE INTO BOLT CARRIER KEY.



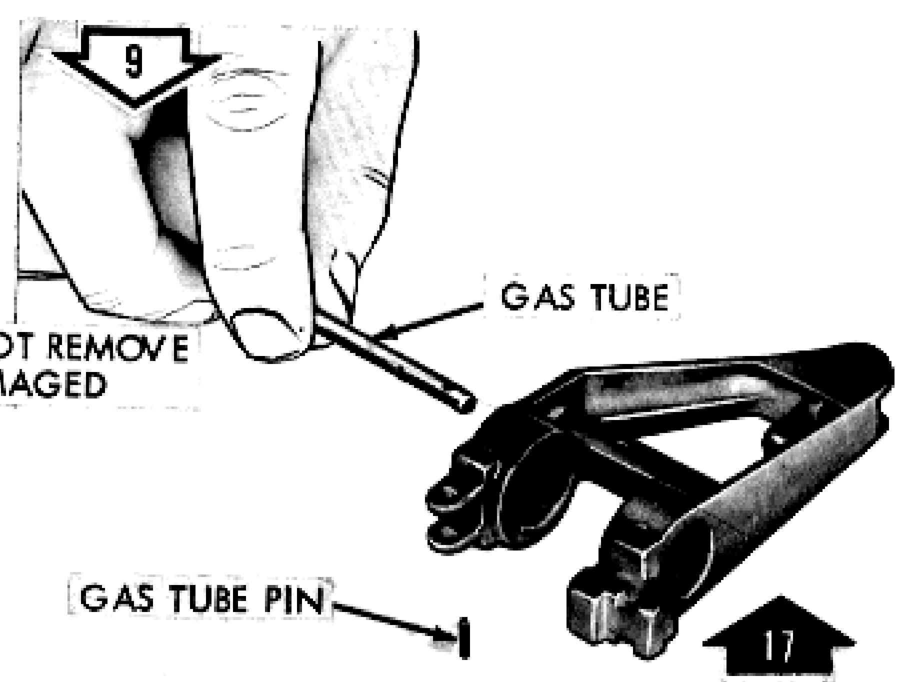
Remove/Install front swivel pin.



Remove/Install swivel.



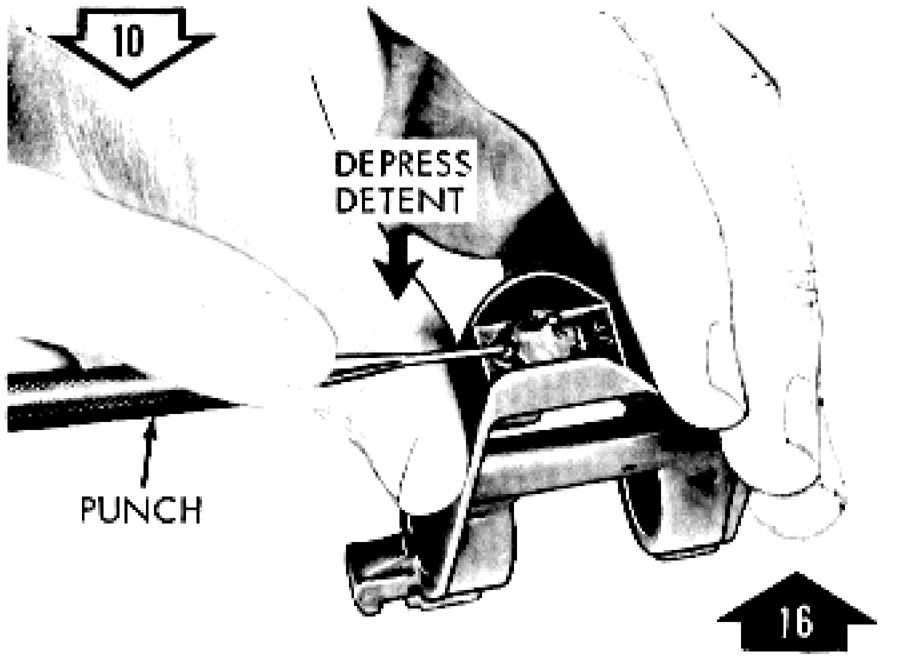
Remove/Install gas tube pin.



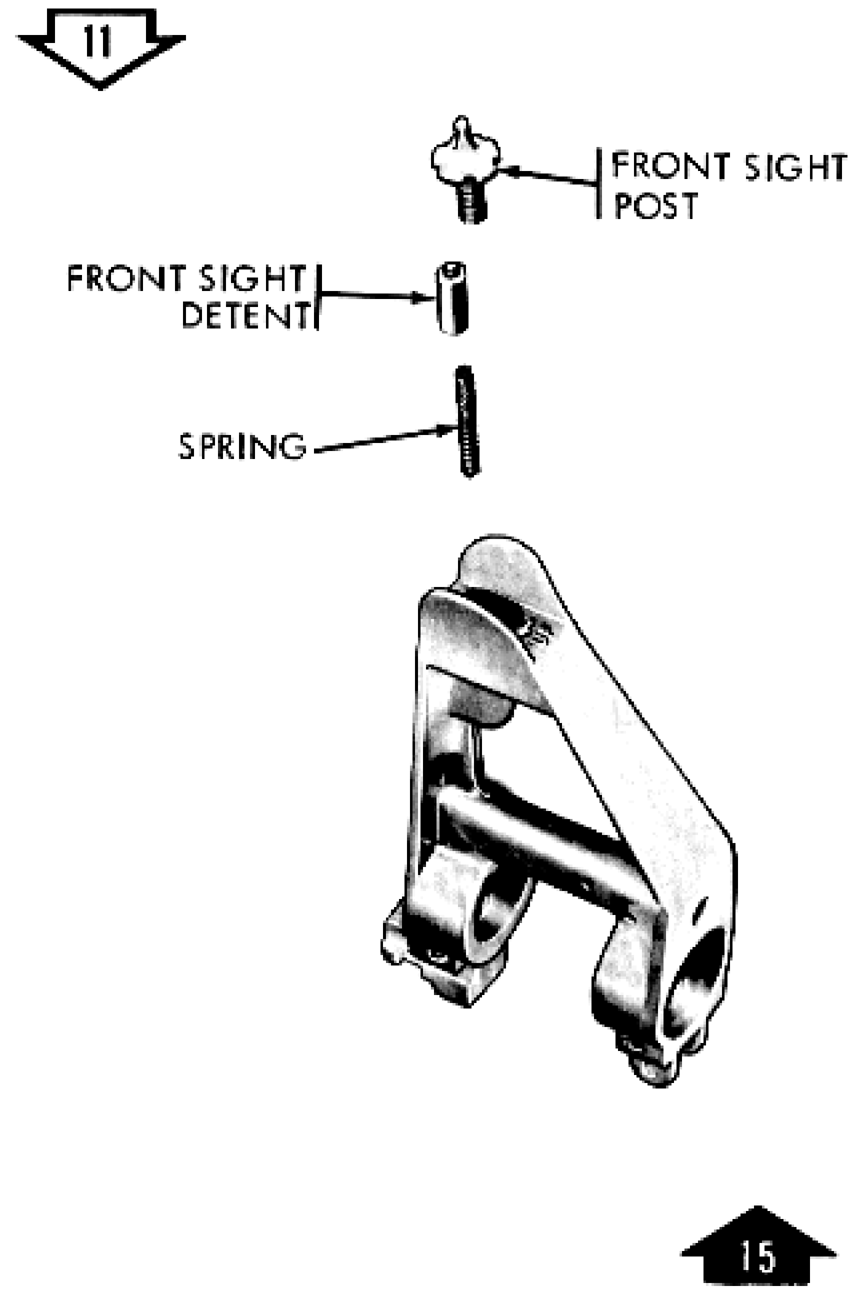
Remove/Install gas tube.

ORD F8150

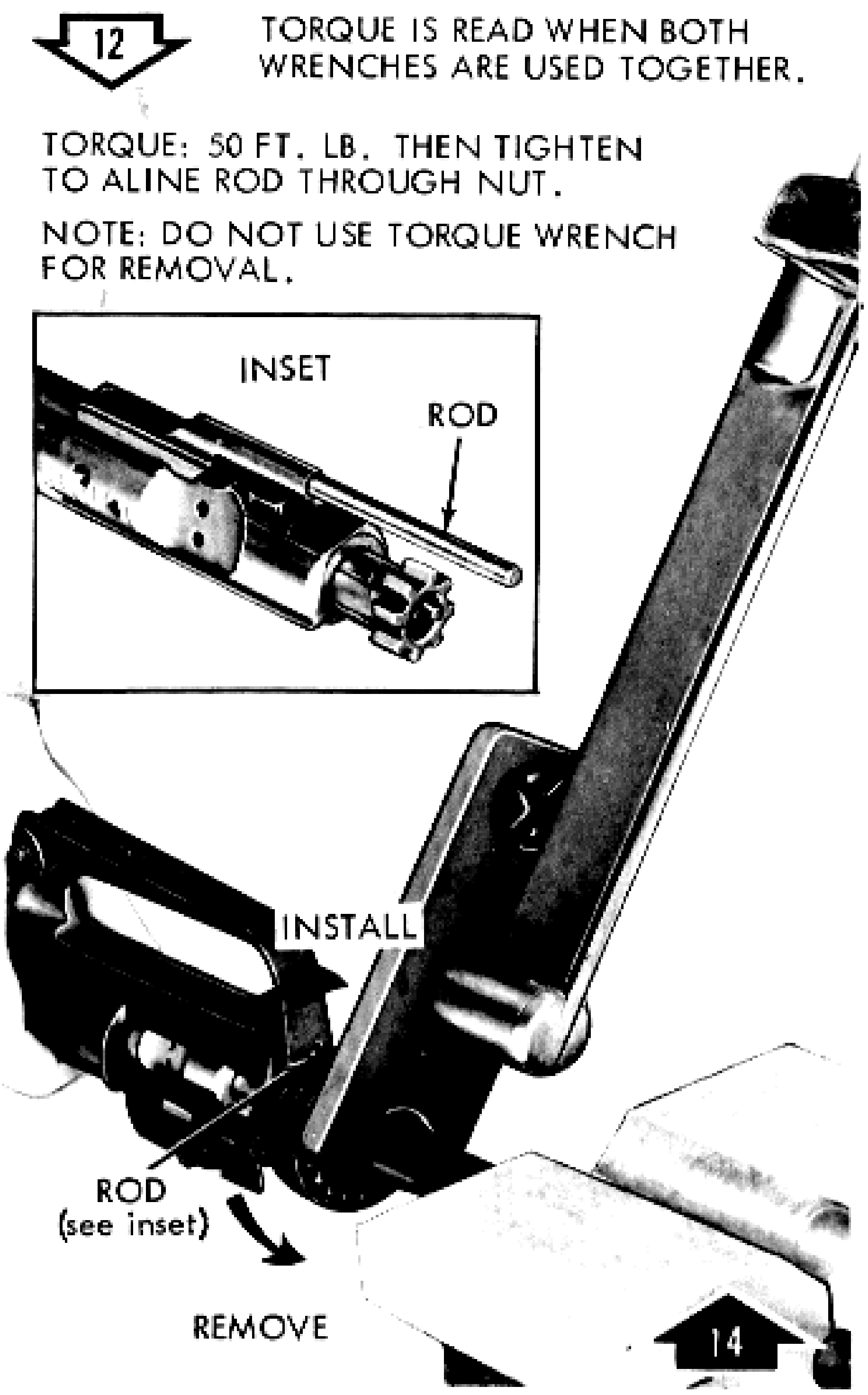
Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 2 of 6)



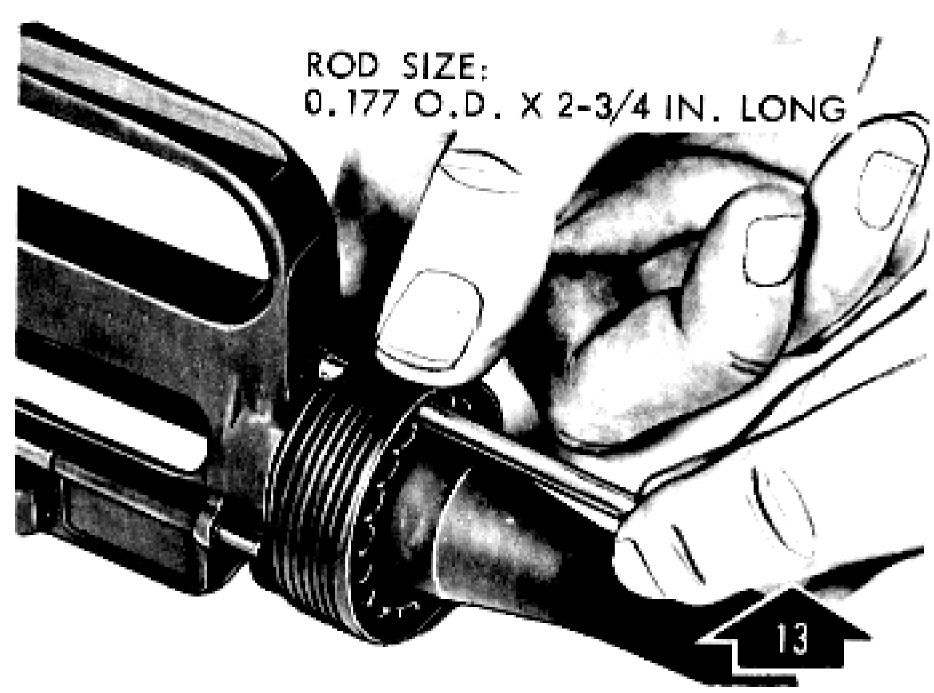
Remove/Install front sight post.



Remove/Install front sight detent and front sight spring.



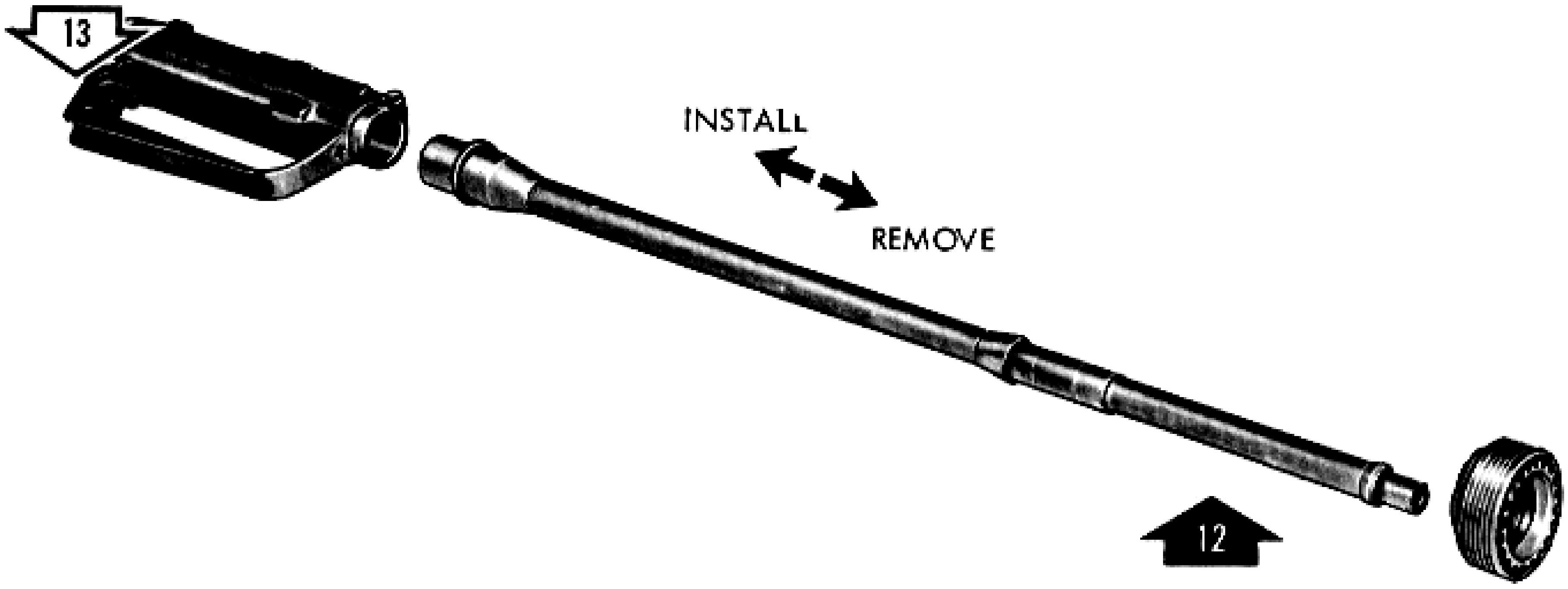
Remove/Install barrel nut and slip ring assembly.



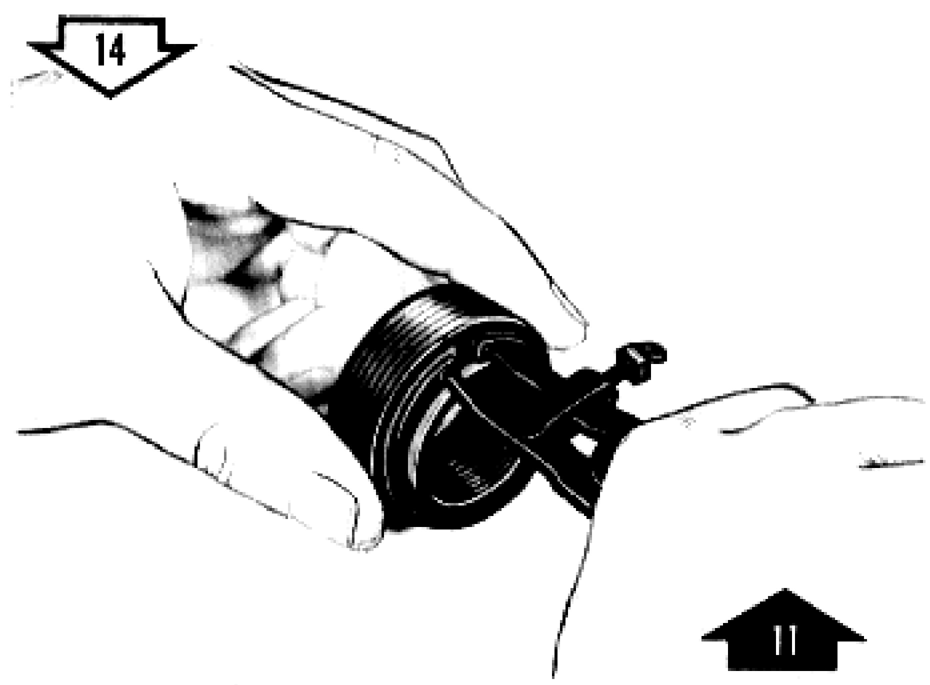
Install and aline slip ring assembly.

ORD F8151

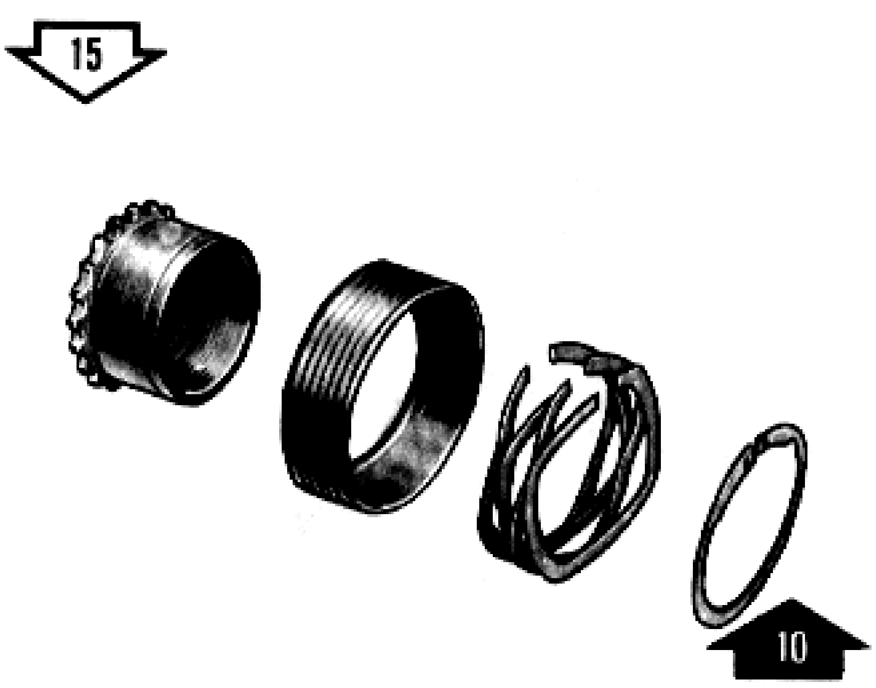
Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 3 of 6).



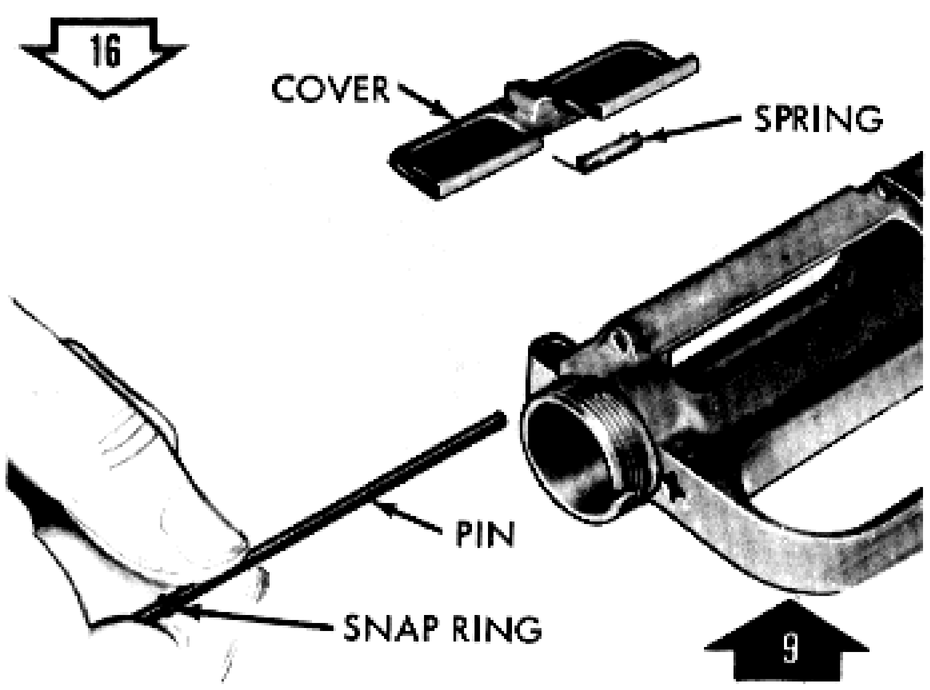
Remove/Install barrel assembly from receiver.



Remove/Install handguard snap ring.



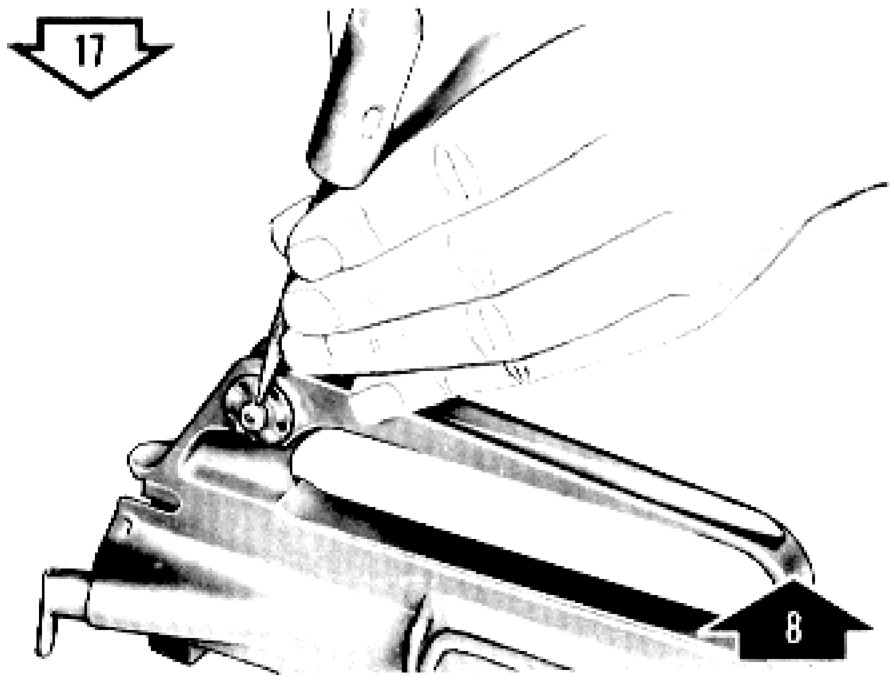
Disassemble/Assemble slip ring assembly.



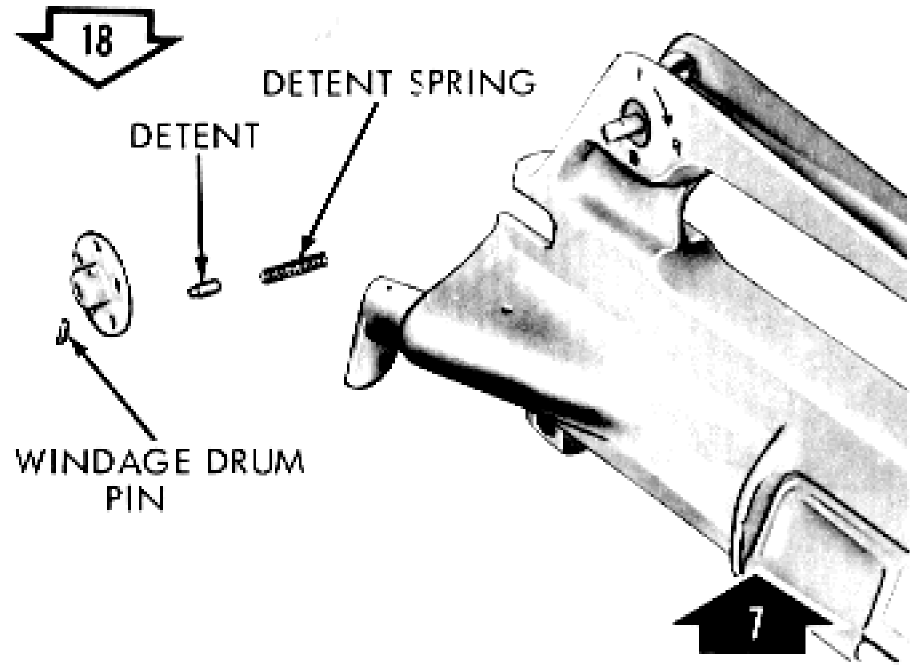
Remove/Install ejector port pin, ejector port spring and ejector port cover.

ORD F8152

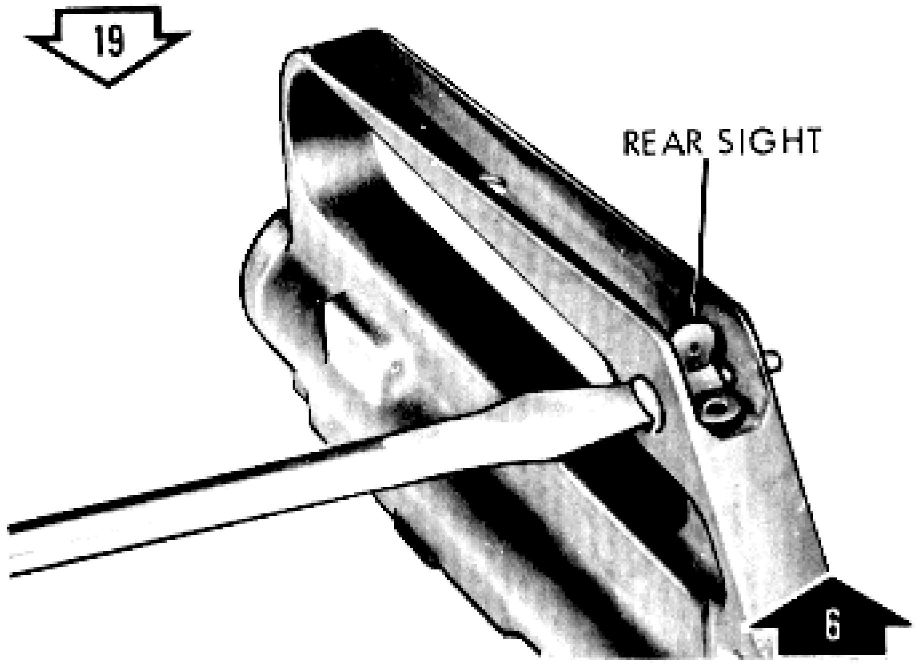
Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 4 of 6)



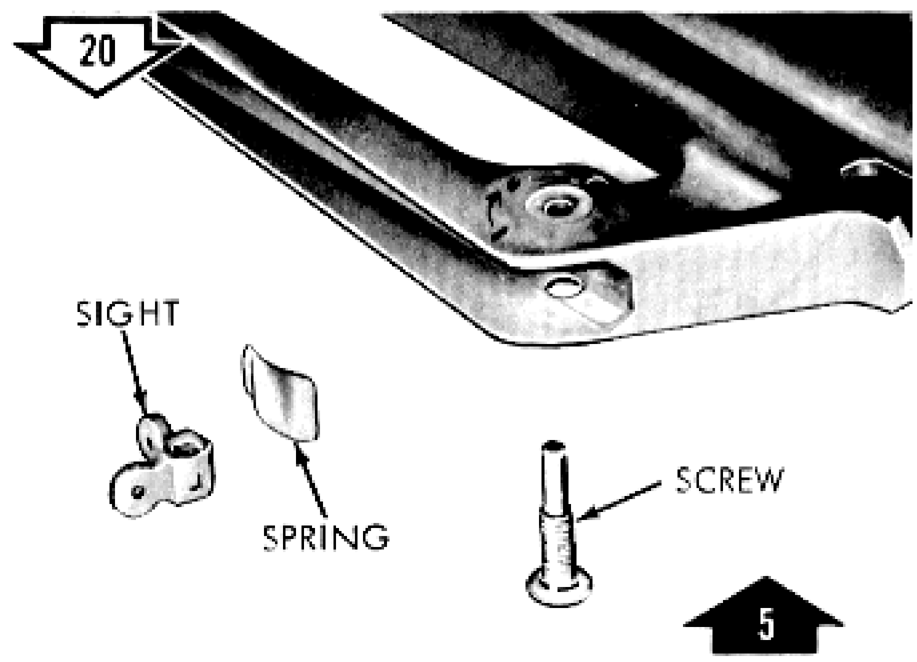
Remove/Install rear sight windage drum pin.



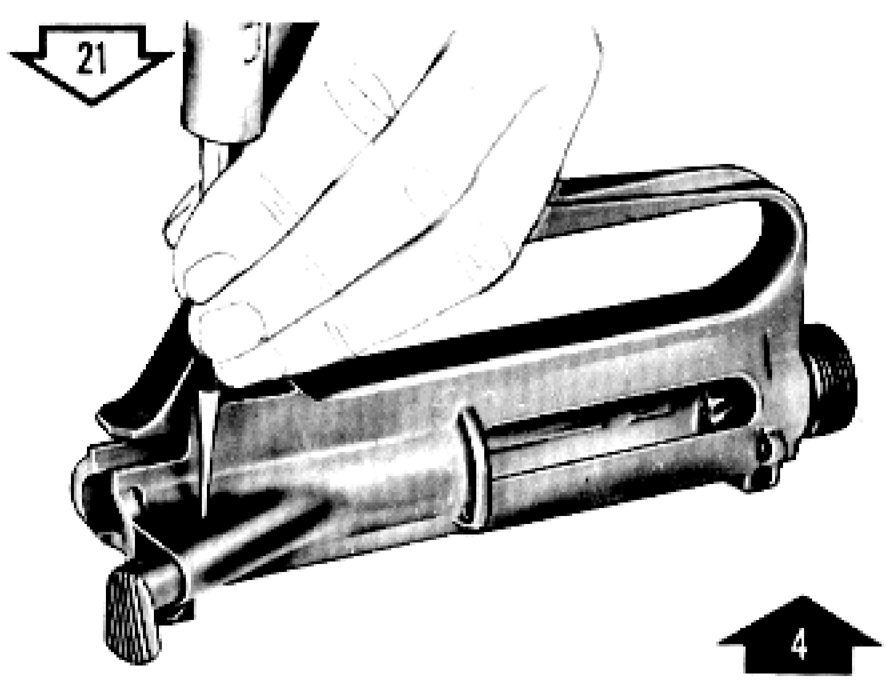
Remove/Install rear sight windage drum, rear sight detent and rear sight detent spring.



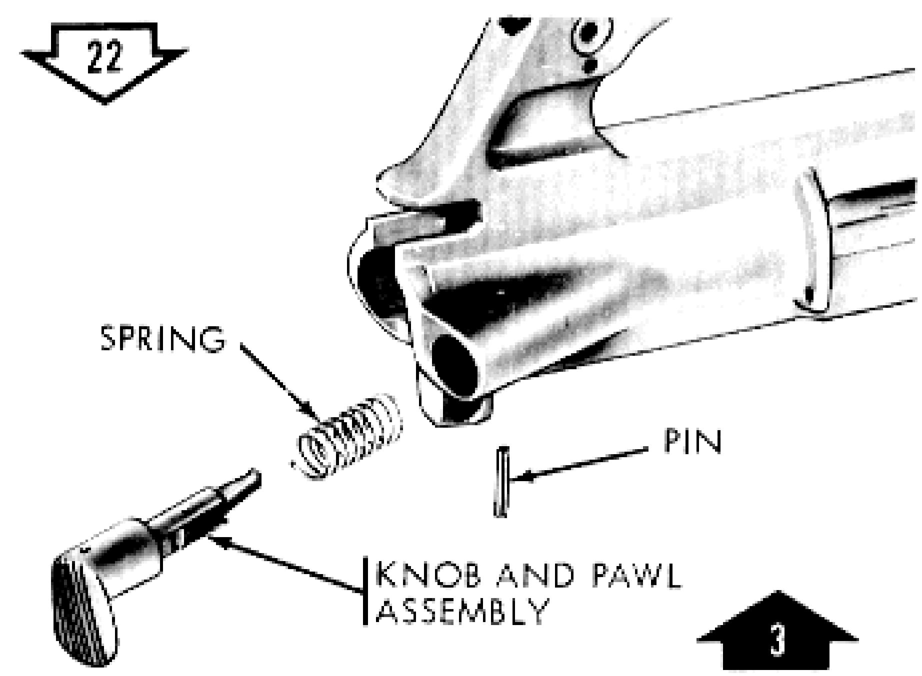
Remove/Install rear sight screw.



Remove/Install rear sight and rear sight spring.



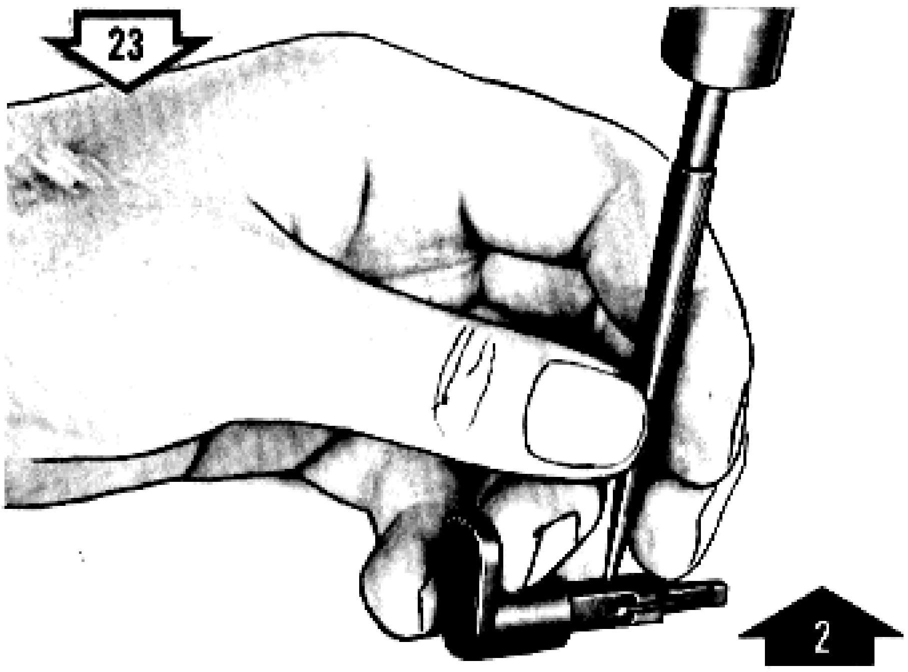
Remove/Install pin (XM16E1).



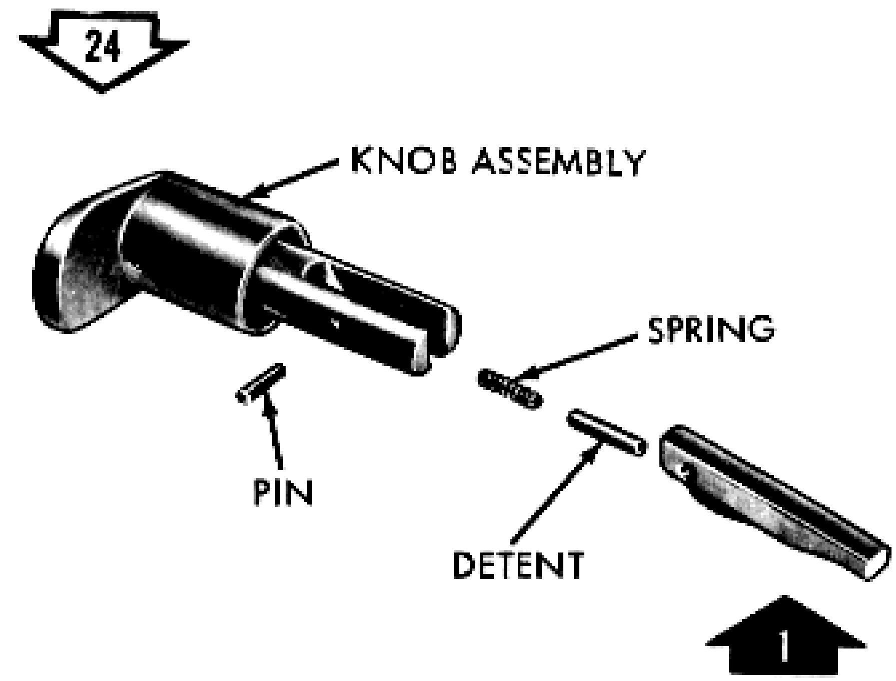
Remove/Install forward assist assembly (XM16E1).

ORD F8153

Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 5 of 6).



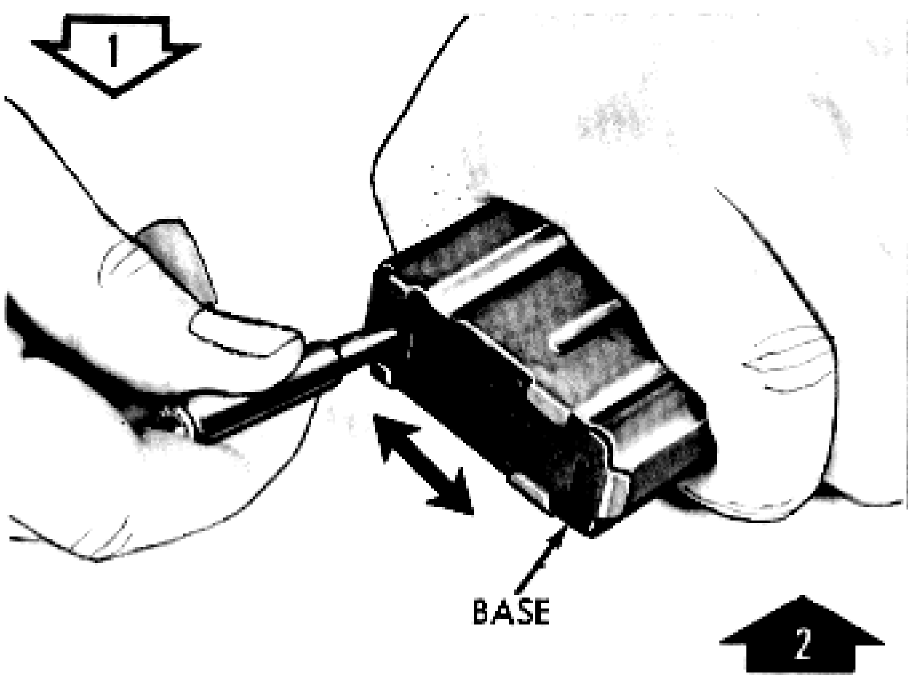
Remove/Install pin (XM16E1).



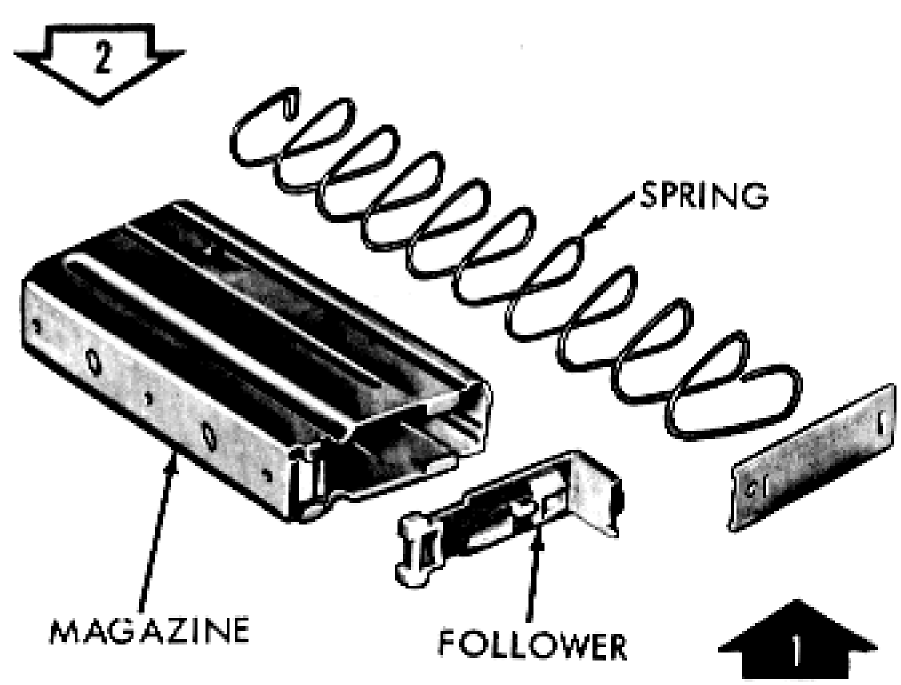
Remove/Install pawl (XM16E1).

ORD F8161

Figure 8-4. Disassembly/Assembly Upper Receiver Group (Page 6 of 6)



Remove/Install base.



Remove/Install follower.

ORD F8154

Figure 8-5. Disassembly/Assembly of Magazine

SECTION 3
CLEANING AND LUBRICATION

8-10. GENERAL.

8-11. Refer to paragraph 3-25 which supplements this section for cleaning and lubrication.

8-12. Table 8-2 contains procedures for cleaning.

CAUTION

Only the cleaning agents in this manual and a vapor degreaser are authorized for cleaning.

Table 8-2. Cleaning

Part, Components or Area	Instructions
Barrel extension	Remove carbon and dirt.
Barrel gas port	Remove carbon with a hand-held No. 43 (0.089) drill.
Gas tube	Remove carbon deposits from the tube surface.
Bolt and bolt carrier	Clean extractor recess. Clean gas relief ports with a hand-held No. 36 (0.106) drill.

SECTION 4
INSPECTION, TEST, AND ADJUSTMENT

8-13. INSPECTION.

8-14. Table 8-3 contains procedures for inspection.

Table 8-3. Inspection

Part, Components or Area	Instructions
Barrel and barrel extension	Inspect surfaces for cracks or defects. Check barrel extension for burrs, broken or worn locking lugs. Inspect bore for damage.
Front sight and gas tube	Check front sight for cracks and general condition. Check gas tube for cracks.
Upper and lower receiver groups	Inspect the receivers and all parts for cracks. Inspect all parts for wear or damage. Check springs for condition, straightness and tension.
Bolt and bolt carrier	Check for cracks in bolt. Inspect bolt for condition of locking lugs, pitted or chipped bolt face, and elongated firing pin hole. Inspect for broken bolt rings and proper spacing of bolt ring gaps. Ring gaps are not to be in line. Inspect firing pin for wear and burrs. Insert the firing pin into the bolt and with tool 7799735 check firing pin protrusion beyond the bolt face; should be between 0.028 and 0.036 (figure 8-6). Inspect bolt carrier for cracks, burrs and chips. Check socket head cap screws for being staked.

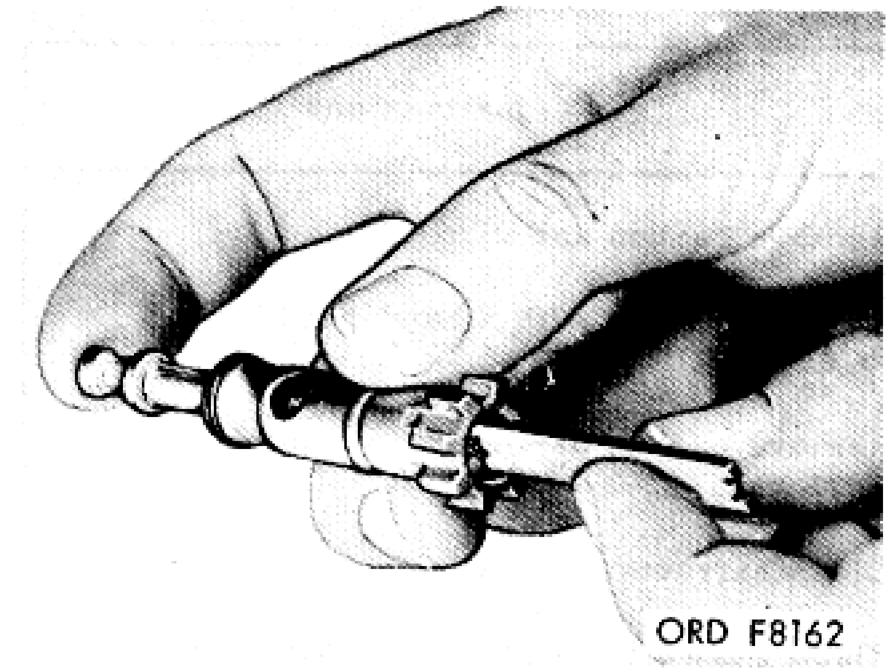


Figure 8-6. Checking Bolt with Firing Pin Protrusion Gage - 7799734

8-15. REPLACEMENT OF PARTS.

8-16. All replacement parts are interchangeable and require no adjustments when being installed in this rifle. However, to insure proper function and full reliability, the following precautions should be taken:

a. Do not interchange bolts and bolt carriers. Keep a bolt with its original bolt carrier.

b. If replacement of either part becomes necessary, carefully check the new part to see that it fits properly, operates smoothly and that proper headspace is provided (figure 8-7).

8-17. TEST.

8-18. The testing of the rifle will consist of:

a. Checking headspace (figure 8-7).

b. Function check (paragraph 3-29).

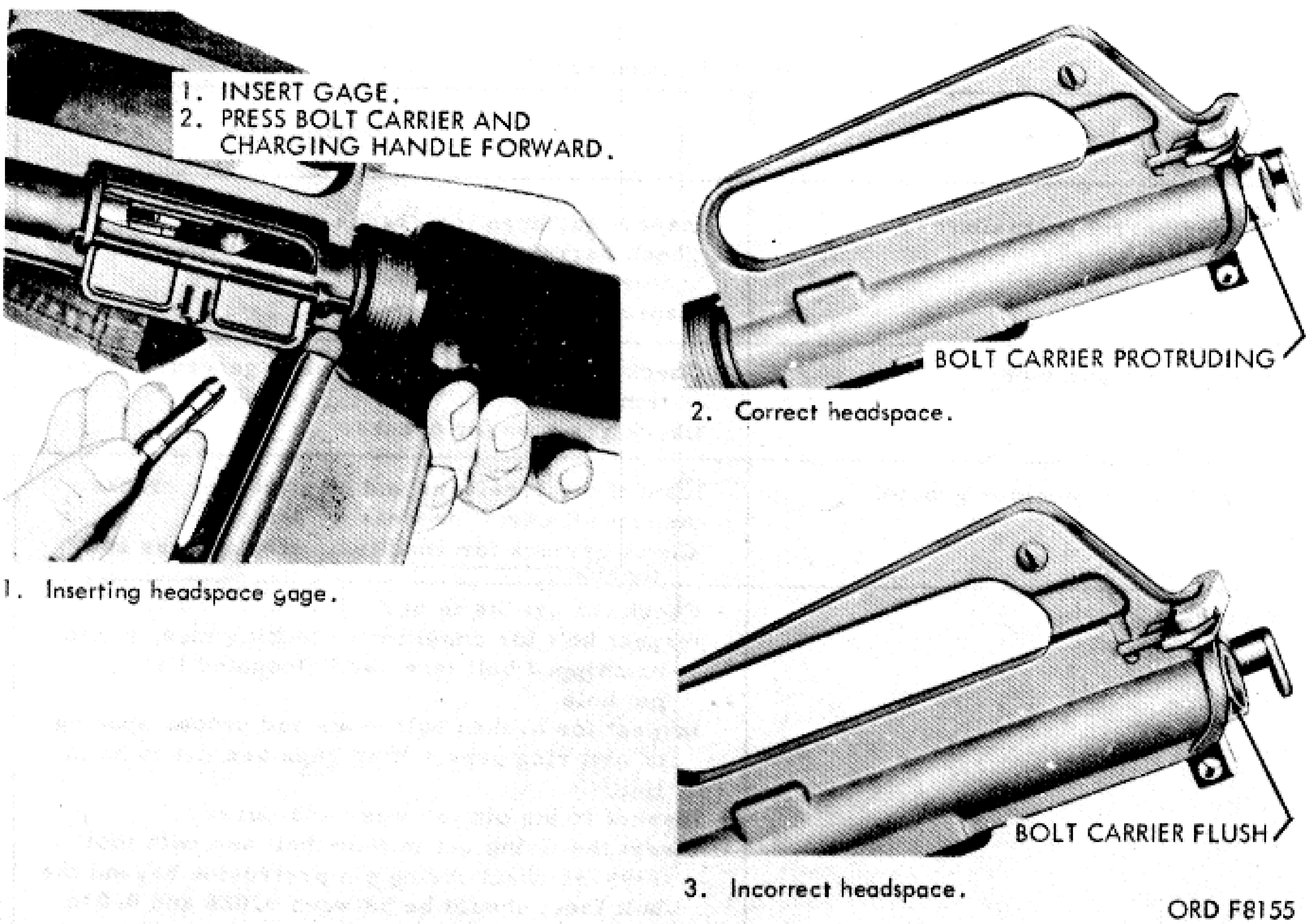


Figure 8-7. Checking Headspace with Headspace Gage - 7799734

CHAPTER IX

BASIC ISSUE ITEMS TOOLS, AND REPLACEMENT PARTS

9-1. GENERAL.

9-2. This chapter lists the basic issue items, tools, equipment and replacement parts for Rifles, 5.56-mm, M16 and XM16E1.

9-3. EXPLANATION OF COLUMNS.

9-4. GENERAL. The group listings are a breakdown of the equipment by physical description which is supported by illustrations.

9-5. FIGURE AND INDEX. (Column (1)).

a. The figure and index numbers are arranged numerically in the Group Assembly Parts List. The primary use of figure and index numbers is to aid in locating a part in the Group Assembly Parts List after the part has been located in the Illustration. Parts not illustrated will be marked - NI.

b. If a part number is known, the figure and index numbers are found in the Group Assembly Parts List. The index number will provide the part number and nomenclature in the Group Assembly Parts List.

9-6. SOURCE AND MAINTENANCE CODES.

a. AIR FORCE SOURCE CODE (Column (2) (a)). The explanation of source codes is as follows:

P1 - Identifies parts which may be requisitioned and installed by any maintenance level consistent with the Command's authorized scope of maintenance. This code is applied to parts which are impractical to manufacture.

P1D - Identifies parts which may be requisitioned and installed by USAF activities authorized depot-level maintenance only. This code is applied to parts which are impractical for service manufacture.

P2 - Identifies insurance-type spare parts which can be installed by any USAF activity consistent with the Command's authorized scope of maintenance. This code is applied to parts which are basically structural and for which no usage is anticipated or known and parts which require special tools, templates and/or jigs and are very difficult, impractical, or uneconomical to manufacture by USAF activities. These items are not subject to periodic replacement or wearout but may require infrequent replacement as a result of accidents or other unexpected occurrences. Delayed procurement items, as defined in AMCR 65-41, are included under this code.

A - Identifies items capable of being assembled at any level of maintenance and is applied to assemblies of two or more parts the majority of which are purchased and/or service manufacture.

X - Parts considered impractical for service manufacture or procurement and for which no usage is anticipated. Code X is applied to main structure members or similar parts which, if repaired, would suggest extensive repair. The need for a part or parts coded X should normally result in a recommendation to retire the article from service.

X1 - Identifies parts applicable at any level of maintenance consistent with the Command's authorized scope of maintenance, and for which procurement of the next larger assembly so coded P1 is normally justified; for example, an integral detail part such as a welded segment inseparable from its assembly; a part machined in a matched set; or a part of any assembly which, if required, would suggest extensive reconditioning of each assembly. In some cases X1 may be used to indicate an integral detail part of an assembly for which there is no anticipated usage and as an assembly was coded M or M1 to be manufactured as a matched set, welded assembly, etc.

b. AIR FORCE MAINTENANCE REPAIR LEVEL CODE (Column (2) (b)). The explanation of maintenance repair level codes is as follows:

S - NO REPAIR. Identifies items which are nonreparable and have no reclamation value. When these items fail they will be disposed of at user level as condemned material.

B - NO REPAIR: RECONDITION. Identifies assemblies or parts that will be reconditioned at the user level by adjusting, cleaning, soldering broken connection, etc. If these items cannot be returned to serviceable condition by such means they will be disposed of at user level as condemned material. No repair parts or tools are specially procured for maintenance of these items.

F - FIELD LEVEL MAINTENANCE. Identifies items which will be repaired by the field level maintenance activities or contracted for repair at base level in accordance with T.O. 00-25-68. Normal servicing will be done by organizational level maintenance. Selected parts, tools, and technical order data are procured and provided to applicable field level maintenance activities for repair of these items. No specialized repair activity (SRA) is established for these items. If they cannot be returned to serviceable condition by the field level maintenance activity with the parts and tools provided they will be disposed of as condemned material. Hi Valu and Critical Items, however, will be turned in to supply and disposition instructions obtained from the applicable IM.

D - LIMITED FIELD REPAIR: DEPOT OVERHAUL. Identifies items on which a limited degree of repair can be accomplished by field level maintenance activities. Normal servicing will be done at organizational level. SRA is established for overhaul of these items. A range of repair parts, tools, and technical order data consistent with the capability of repair are procured and provided to applicable field maintenance activities. Because of the design characteristics and complexity of repair, the degree of repair which is authorized on these items at field maintenance level is necessarily determined by the degree of technical skills required and the cost of special tools, special test equipment, spare parts, and the predicted frequency of failure generation. If these items cannot be returned to serviceable condition with authorized parts and tools they will be returned to supply for shipment to the designated SRA.

DM - LIMITED FIELD REPAIR: MOBIL DEPOT OVERHAUL. Identifies items to which all the conditions of code "D" apply except that repair beyond field capability will be done by the Mobile Depot Activity (MDA). If the MDA cannot repair these items, they will determine whether these items should be condemned or sent to the SRA.

L - DEPOT LEVEL MAINTENANCE ONLY. Identifies items that will be repaired only at designated SRA. Repair parts and tools for repair are procured and provided only to these authorized activities. Required functional checkout and bench check equipment may be provided to applicable organizational and field level maintenance activities for accomplishing external adjustment or calibration and for verifying serviceability of these items. If they are found unserviceable they will be turned in to supply for shipment to the SRA.

LM - DEPOT LEVEL MAINTENANCE ONLY; MOBILE DEPOT ACTIVITY. Identifies items to which all conditions of Code "L" apply except that repair will be accomplished by MDA. If MDA cannot repair these items, they will determine whether these items should be condemned or sent to the SRA.

c. ARMY SOURCE CODE (Column (2) (c)). The explanation of source codes is as follows:

P1 - Applied to repair parts which are low mortality parts, stocked in or supplied from technical service depots, and authorized for installation at indicated maintenance support levels.

A - Requisition components under their individual Federal stock number and assemble.

X1 - Applied to repair parts which are not procured or stocked, the requirement for which will be supplied by use of next higher assembly or component. No maintenance level code will be shown for X1 items.

X - When this part fails, the end item should be turned in for replacement.

d. ARMY MAINTENANCE LEVEL (Column (2) (d)). The explanation of maintenance level code is as follows:

O - Organization.

F - Direct Support

H - General Support

R - Items which are economically repairable at direct and general support maintenance activities and are normally furnished by supply on an exchange basis. Gages will be forwarded to gage laboratories in accordance with SB 9-75.

9-7. FEDERAL STOCK NUMBER (Column (3)). This column lists the federal stock number which has been assigned by the Cataloging Division, Defense Logistics Service Center.

9-8. DESCRIPTION (Column (4)). This column lists the Federal Item Name (shown in capital letters) and any additional description required for supply operations. The manufacturers part number is also included for reference.

9-9. UNIT OF ISSUE - DS AND GS SUPPORT (Column (5)). This column lists the package quantity to be requisitioned singly or in multiples by Army or Air Force Direct and General Support units. For requisitioning quantities other than listed refer to AR 725-50 for requisitioning procedures.

9-10. QUANTITY INCORPORATED IN UNIT (Column (6)). This column lists the quantity of each listed part incorporated in the major item. When a part is common to two or more functional groups, the quantity shown will be the total quantity for the major item. Subsequent listings of the item will refer back to the first listing of the item.

9-11. 15-DAY MAINTENANCE ALLOWANCE PER 100 EQUIPMENTS (COLUMN (7)).

a. This column lists an allowance factor which is based on the latest mortality data and is the estimated average quantity to provide maintenance and, where applicable, supply support for 100 equipments for a 15-day period under combat conditions. A decimal fraction system is used to express the allowance factors.

b. When an allowance factor is inclosed in parentheses, the item is designated as a "combat essential item of a critical nature" and must be stocked at all times, regardless of demand.

c. Since the allowance factors are based on 100 equipments, it is necessary to compute the exact quantity authorized. This quantity is determined by use of a simple mathematical formula. Resulting fractional values of 0.5 or larger will be rounded to the next higher whole number. Fractional values below 0.5 will be rounded to the next lower whole number.

Example 1: If the number of equipments supported is 30 and the allowance factor for 100 equipments is 1.9, the following formula would be used:

$$\frac{30 \times 1.9}{100} = 0.57$$

Since the resulting figure is larger than 0.5 the support would be authorized a quantity of 1.

Example 2: If the number of equipments supported is 89 and the allowance factor for 100 equipments is 3.4, the following formula would be used:

$$\frac{89 \times 3.4}{100} = 3.026$$

In this instance, the result is rounded to the next lower whole number since the fractional value is less than 0.5 and the support would be authorized a quantity of 3.

d. Additional items not expected to fail during the first year, but which may be required to perform authorized direct and general support maintenance in subsequent years, are listed with no allowance factor shown. These parts are identified by an asterisk (*) in the allowance columns and are to be requisitioned as required for immediate use only.

e. The quantity determined in accordance with (2) above represents the initial stockage for a 15-day period. Major commanders will prescribe the period of time that will be used to compute stockage for each support.

Note

The 15-day level is not applicable to tools for direct and general support maintenance.

9-12. SUPPORT UNITS.

9-13. ORGANIZATIONAL. Organizational maintenance is that maintenance normally authorized for, performed by, and the responsibility of a using organization on equipment in its possession. This maintenance consists of functions and repairs within the capabilities of authorized personnel, skills, tools, and test equipment as prescribed in appropriate Department of the Army TOE's or TD's. Maintenance exceeding the authorized scope of maintenance may be performed when authorized by the next higher maintenance support commanders.

9-14. DIRECT SUPPORT. Direct support maintenance is that maintenance normally authorized and performed by designated maintenance activities in direct support of using organizations. This category of maintenance is limited to the repair of end items or unserviceable assemblies in support of using organizations on a return to user basis.

9-15. GENERAL SUPPORT. General support maintenance is that maintenance authorized and performed by designated TOE and TD organizations in support of the Army supply system. Normally TOE and TD general support maintenance organizations will repair or overhaul materiel to required maintenance standards in a ready to issue condition based upon applicable supported Army area supply requirements.

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES — USAF (a) Source	USAF (b) Maintenance Repair Level	ARMY (c) Source	ARMY (d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
					1005-856-6885	RIFLE, 5.56-MM: M16 (USAF) (62500)					
					1005-073-9421	RIFLE, 5.56-MM: XM16E1 W/E (ARMY) (8427000)					
9-						BOLT CARRIER GROUP					
1-1	P1	B	P1	O	1005-992-7296	. PIN, FIRING PIN RETAINING: (61561)	10	1	(1.0)	(0.4)	(0.1)
1-2	P1	B	P1	O	1005-017-9547	. PIN, FIRING: (62294)	10	1	(1.0)	(0.2)	(0.1)
1-3	P1	B	P1	O	1005-992-7294	. PIN, BOLT CAM: (61704)	1	1	(1.0)	(0.1)	(0.1)
1-4	P1D	F	P1	F	1005-992-7285	. BOLT ASSEMBLY: (62116)	1	1		(0.1)	(0.1)
1-5	P1	B	P1	O	1005-992-7290	. . PIN, EXTRACTOR: (61563)	10	1	(1.0)	(0.4)	(0.1)
1-6	P1	B	P1	O	1005-992-7288	. . EXTRACTOR, SMALL ARM CARTRIDGE: (61562)	1	1	(1.0)	(0.1)	(0.1)

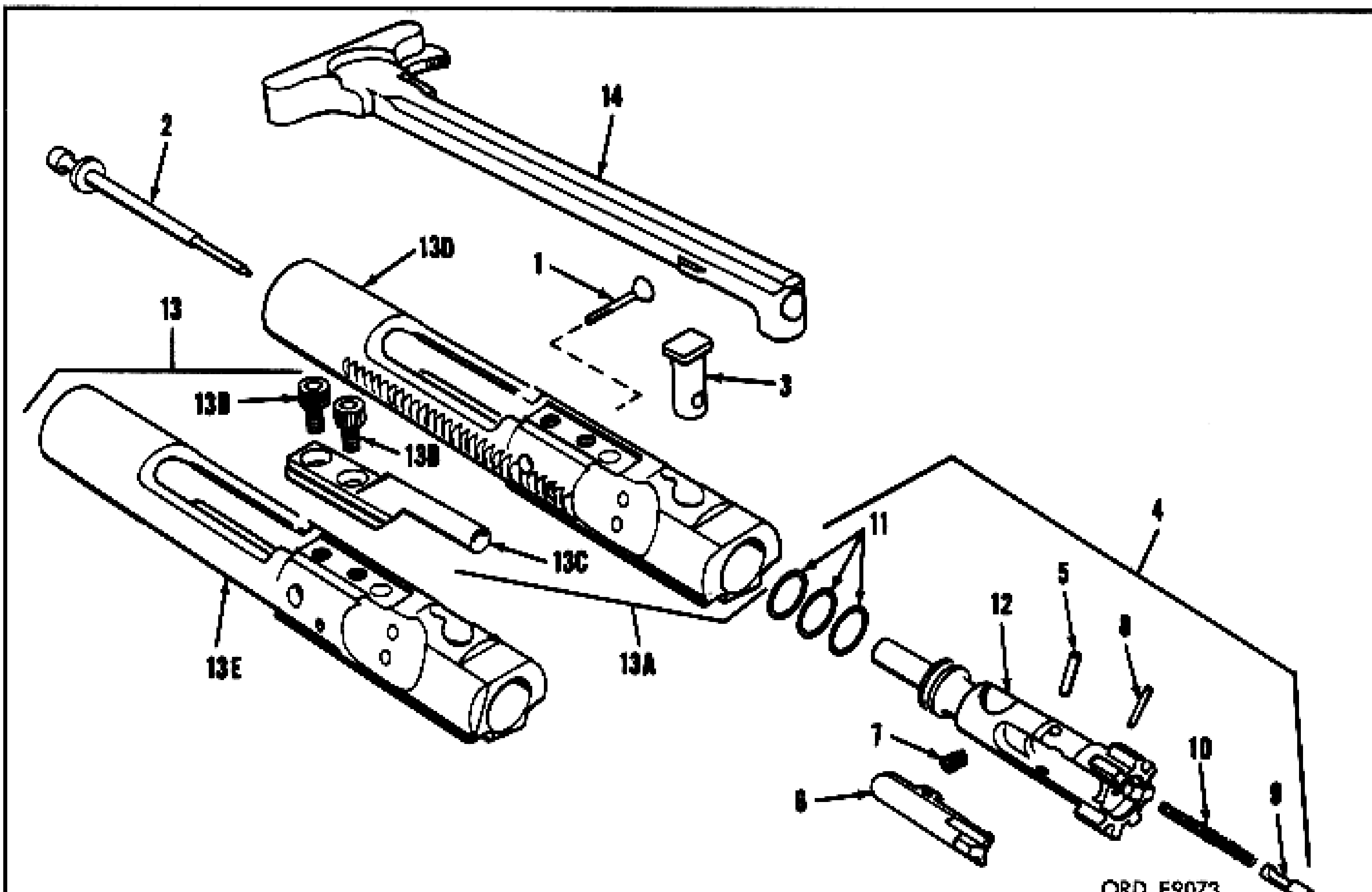


Figure 9-1. Bolt Carrier Group.

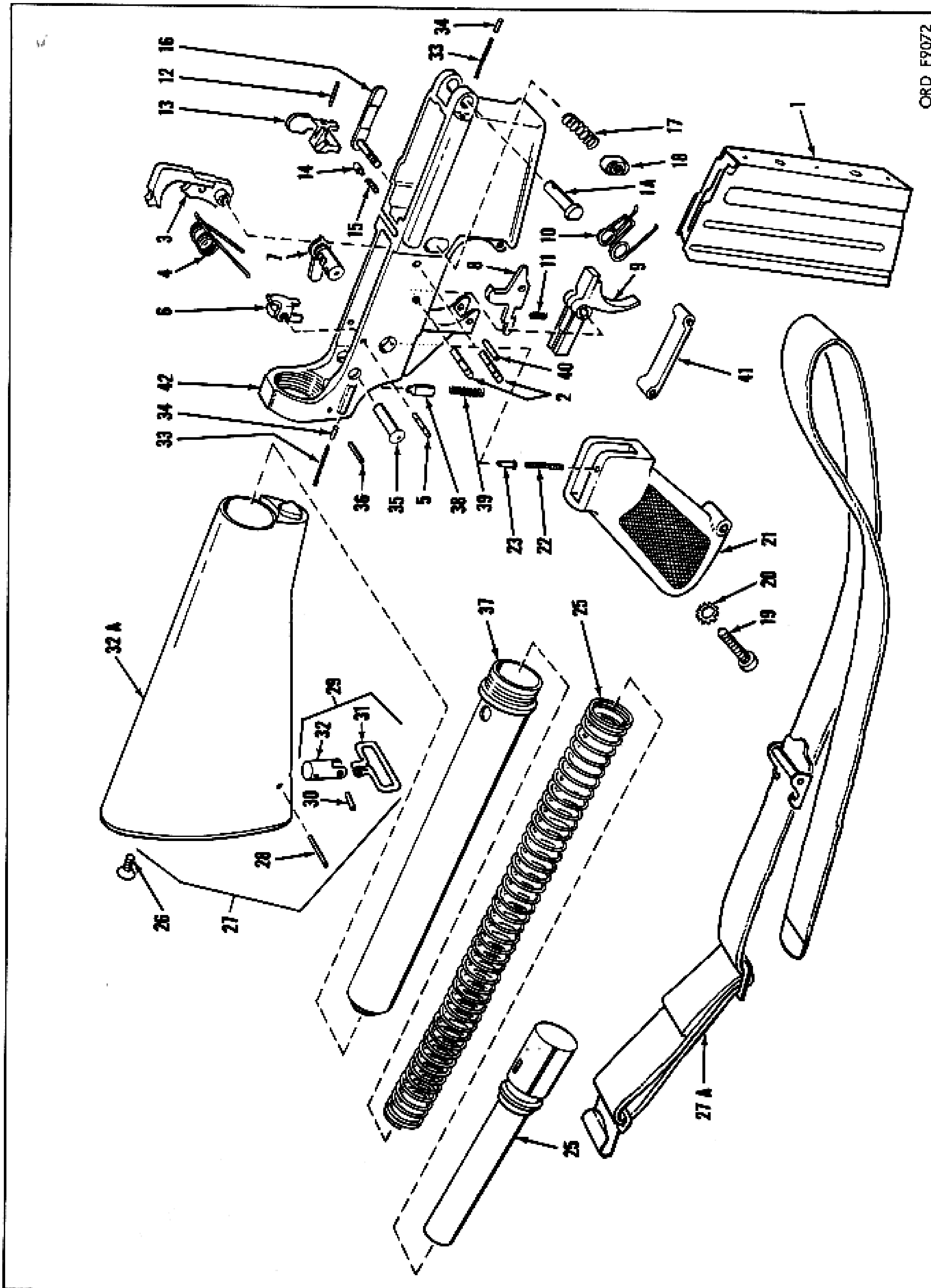


Figure 9-2. Lower Receiver Group

(1) Figure and Index	(2) SOURCE AND MAINT CODES — USAF (a) Source	(b) Maintenance Repair Level	ARMY (c) Source	(d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
1-7	P1	B	P1	O	1005-992-7289	. . SPRING, EXTRACTOR: 5 coils, 0.145 od, 0.222 o/a lg (61568	10	1	(1.0)	(0.4)	(0.1)
1-8	P1	B	P1	F	1005-992-7293	. . PIN, EJECTOR: (95102)	10	1		(0.1)	(0.1)
1-9	P1	B	P1	F	1005-992-7291	. . EJECTOR, SMALL ARMS CARTRIDGE: (61564)	10	1		(0.1)	(0.1)
1-10	P1	B	P1	F	1005-992-7292	. . SPRING, EJECTOR AND SAFETY DETENT: 28 coils, 0.100 od, 0.904 o/a lg (61569)	10	1		(0.8)	(0.2)
1-11	P1	B	P1	F	1005-992-7287	. . RING, BOLT: (61540)	10	3		(0.4)	(0.1)
1-12	X1	B	X1			. . BOLT: (61538)		1			
1-13	A	B				. CARRIER AND KEY: M16 ONLY (61826)		1			
1-13 A	A	B	A	F		. CARRIER AND KEY: M16 and XM16E1 (62286)		1			
1-13 B	P1	B	P1	F	1005-992-7284	. . . SCREW, CARRIER KEY: (92201)	10	2		(0.2)	(0.1)
1-13 C	P1	B	P1	F	1005-992-7283	. . . KEY, BOLT CARRIER: (61547)	1	1		(0.1)	(0.1)
1-13 D	P1	F	P1	F	1005-738-6213	. . . CARRIER, BOLT: M16 and XM16E1 (62274)	1	1		(0.1)	(0.1)
1-13 E	U	F				. . . CARRIER, BOLT: M16 (61544)					
1-14	P1	B	P1	F	1005-017-9546	. HANDLE, CHARGING: (62290)	1	1		(0.1)	(0.1)
2-						LOWER RECEIVER GROUP					
2-1	P1	B	P1	O	1005-056-2237	. MAGAZINE ASSEMBLY: Aluminum (20 cartridge capacity) (62103)	4	1		(4.0)	(6.2)
2-NI	P1	B			1005-992-6671	. PIN, PIVOT: early M16 (95601)	10	1		(0.2)	(0.1)
2-1A	P1	B	P1	F	1005-017-9537	. PIN, PIVOT: M16 and XM16E1 (62221)	10	1		(0.2)	(0.1)
2-2	P1	B	P1	F	1005-992-7309	. PIN, HAMMER AND TRIGGER: (61654)	20	2		(0.4)	(0.1)
2-3	P1	B	P1	F	1005-017-9551	. HAMMER ASSEMBLY: (62317)	1	1		(0.2)	(0.1)
2-4	P1	B	P1	F	1005-992-6648	. SPRING, HAMMER: (61697)	10	1		(0.1)	(0.1)
2-5	P1	B	P1	F	1005-992-6650	. PIN, AUTOMATIC SEAR: (61615)	10	1		(0.1)	(0.1)
2-6	P1	B	P1	F	1005-992-6649	. SEAR, AUTOMATIC: (61622)	1	1		(0.1)	(0.1)
2-7	P1	B	P1	F	1005-992-6666	. LEVER, SELECTOR: safety and firing (61959)	1	1		(0.1)	(0.1)
2-8	P1	B	P1	F	1005-992-7310	. DISCONNECT: (61918)	10	1		(0.2)	(0.1)
2-9	P1	B	P1	F	1005-992-7307	. TRIGGER: (61955)	1	1		(0.1)	(0.1)
2-10	P1	B	P1	F	1005-992-7308	. SPRING, TRIGGER: (61657)	10	1		(0.1)	(0.1)

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES USAF (a) Source	USAF (b) Maintenance Repair Level	ARMY (c) Source	ARMY (d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue /DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(7) (b) Direct Support	(7) (c) General Support
2-11	P1	B	P1	F	1005-992-7311	. SPRING, DISCONNECT: 7 coils, 0.150 od, 0.35 o/a lg (61925)	10	1		(0.2)	(0.1)
2-12	P1	B	P1	F	1005-992-7306	. PIN, BOLT CATCH: (95105)	10	1		(0.1)	(0.1)
2-13	P1	B	P1	F	1005-017-9548	. CATCH, BOLT: (62301)	1	1		(0.1)	(0.1)
2-14	P1	B	P1	F	1005-056-2247	. PLUNGER, BOLT CATCH: (62178)	10	1		(0.1)	(0.1)
2-15	P1	B	P1	F	1005-056-2246	. SPRING, BOLT CATCH: 11 coils, 0.152 od, 0.517 o/a lg (62177)	10	1		0.1	0.1
2-16	P1	B	P1	F	1005-056-2201	. CATCH, MAGAZINE: (61604)	1	1		(0.1)	(0.1)
2-17	P1	B	P1	F	1005-992-7301	. SPRING, MAGAZINE CATCH: 8 coils, 0.298 od, 1.15 o/a lg (61759)	10	1		(0.1)	(0.1)
2-18	P1	B	P1	F	1005-992-7302	. BUTTON, MAGAZINE CATCH: (62032)	10	1		(0.1)	(0.1)
2-19	P1	B	P1	F	1005-992-6669	. SCREW, PISTOL GRIP: (92701)	10	1		(0.1)	(0.1)
2-20	P1	B	P1	F	1005-992-6670	. WASHER, LOCK, PISTOL GRIP: (90001)	10	1		0.1	0.1
2-21	P1	B	P1	F	1005-056-2250	. GRIP, PISTOL: black (62194)	1	1		0.1	0.1
2-22	P1	B	P1	F	1005-992-7292	. SPRING, EJECTOR AND SAFETY DETENT: 28 coils, 0.100 od, 0.904 o/a lg (61569) See allowance under item 1-10	10	1		0.1	0.1
2-23	P1	B	P1	F	1005-992-6667	. DETENT, SELECTOR LEVER: (61785)	10	1		(0.2)	(0.1)
2-24	P1	B	P1	F	1005-992-6658	. GUIDE ASSEMBLY, ACTION SPRING: (62119)	1	1		(0.1)	(0.1)
2-25	P1	B	P1	F	1005-992-6665	. SPRING, ACTION: 44 coils, 0.940 od, 12.5 o/a lg (61581)	1	1		0.1	0.1
2-26	P1	B	P1	F	1005-992-6657	. SCREW, BUTT CAP: (92601)	10	1		0.1	0.1
2-27	P1	F	P1	F	1005-017-9549	. STOCK ASSEMBLY, MOLDED: w/swivel, black (62302)	1	1		(0.1)	(0.1)
2-27 A	P1	B	P1	O	1005-654-4058	. SLING, SMALL ARMS: M1, cotton webbing, olive drab, clampkeeper type adjustment (6544058)	10	1	1.0		
2-28	P1	B	P1	F	1005-056-2266	. . PIN, ROLL, REAR SWIVEL: (95111)	10	1		0.1	0.1
2-29	P1	B	P1	F	1005-017-9544	. . SWIVEL ASSEMBLY, GUN SLING: (62282)	10	1		0.1	0.1
2-30	P1	B	P1	F	1005-992-7278	. . . PIN, FRONT SWIVEL: (95103)	10	1		0.1	0.1
2-31	P1	B	P1	F	1005-017-9543	. . . SWIVEL, GUN SLING: (62280)	10	1		0.1	0.1
2-32	X1		X1			. . . BASE, SWIVEL: (62097)		1			

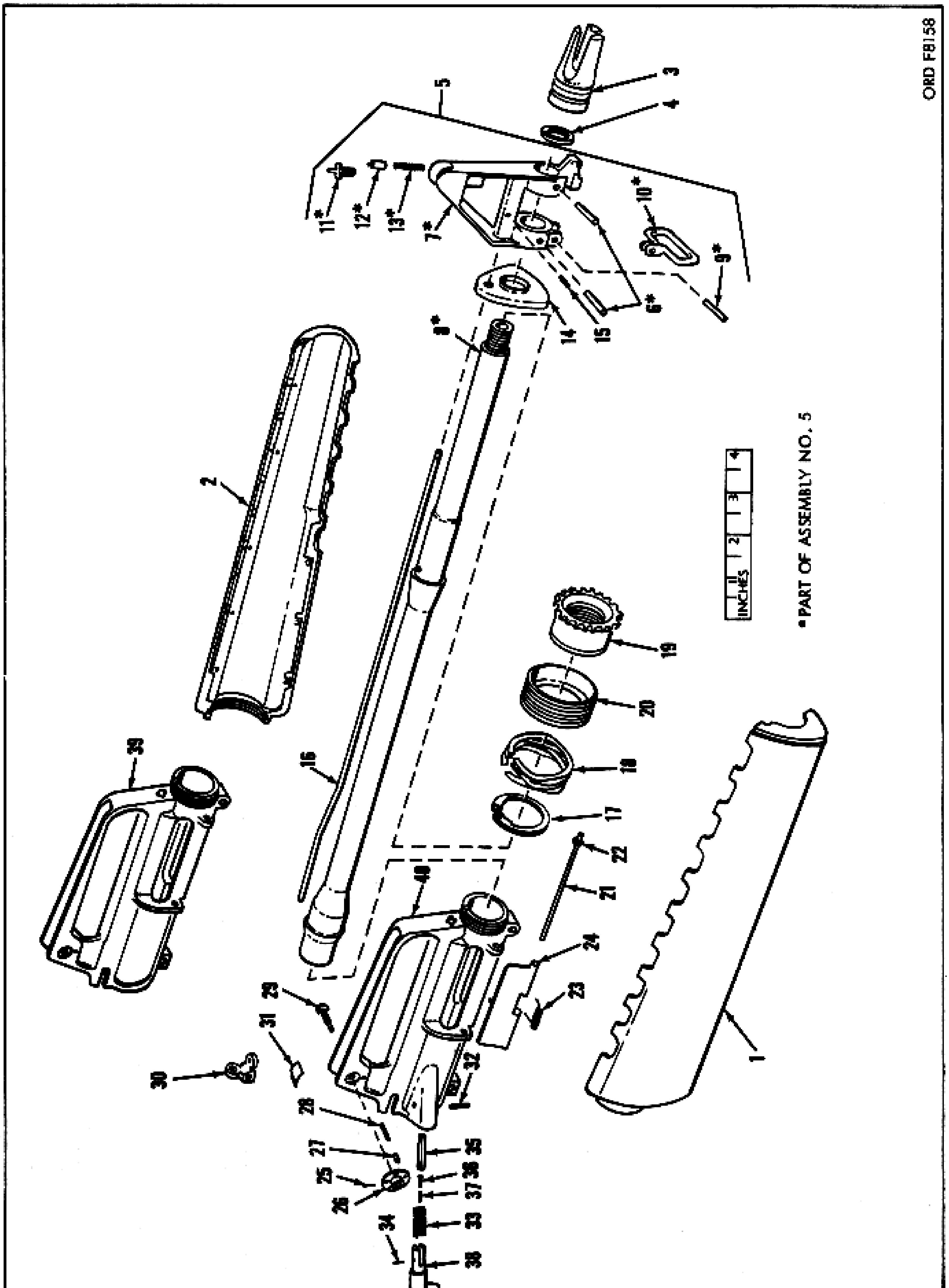


Figure 9-3. Upper Receiver Group

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES — USAF (a) Source	(b) Maintenance Repair Level	ARMY (c) Source	(d) Maintenance Repair Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
2-32 A	X1		X1			. . . . STOCK: (62204)		1			
2-33	P1	B	P1	F	1005-992-6655	. SPRING, DETENT, TAKE-DOWN PIN: 40 coils,0.088 od, 1.10 o/a lg (61692)	10	1		0.2	0.1
2-34	P1	B	P1	F	1005-992-6654	. DETENT, TAKEDOWN PIN: (61698)	10	1		(0.2)	(0.1)
2-35	P1	B	P1	F	1005-992-6653	. PIN, TAKEDOWN: (61655)	10	1		(0.1)	(0.1)
2-36	P1	B	P1	F	1005-992-7298	. PIN, EXTENSION, LOWER: (95107)	10	1		0.1	0.1
2-37	P1D	F	P1	F	1005-992-7297	. EXTENSION, LOWER RE-CEIVER: (61574)	1	1		0.1	0.1
2-38	P1	B	P1	F	1005-992-6651	. RETAINER, BUFFER: (61582)	10	1		(0.2)	(0.1)
2-39	P1	B	P1	F	1005-992-6652	. SPRING, BUFFER RE-TAINER: 14 coils, 0.180 od, 0.940 o/a lg (61694)	10	1		(0.2)	(0.1)
2-40	P1	B	P1	F	1005-992-7300	. PIN, TRIGGER GUARD, PIVOT: (95106)	10	1		(0.1)	(0.1)
2-41	P1	B	P1	F	1005-992-7299	. GUARD, TRIGGER: (61970)	1	1		(0.1)	(0.1)
2-42	X	D	X			. RECEIVER, LOWER: (62300)		1		(0.1)	(0.1)
3-						UPPER RECEIVER GROUP					
3-1	P1	B	P1	F	1005-056-2252	. GUARD, HAND, GUN: R.H. black (62198)	1	1		(0.1)	(0.1)
3-2	P1	B	P1	F	1005-056-2251	. GUARD, HAND, GUN: L.H. black (62196)	1	1		(0.1)	(0.1)
3-3	P1	B	P1	F	1005-056-2248	. SUPPRESSOR, FLASH: (62182)	1	1		0.1	0.1
3-4	P1	B	P1	F	1005-992-7280	. WASHER, LOCK, FLASH SUPPRESSOR: (62126)	10	1		0.1	0.1
3-5	P1D	F	P1	F	1005-056-2253	. BARREL AND SIGHT AS-SEMBLY: (62206)	1	1		(0.1)	(0.1)
3-6	P1	B	P1	F	1005-979-3926	. . PIN, FRONT SIGHT, TAPERED: (62086)	10	2		(0.1)	(0.1)
3-7	X1	F	X1			. . SIGHT, FRONT: (62068)		1			
3-8	X1	F	X1			. . BARREL ASSEMBLY: (62180)		1			
3-9	P1	B	P1	F	1005-992-7278	. . PIN, FRONT SWIVEL: (95103) See allowance under item 2-30	10	1			
3-10	P1	B	P1	F	1005-017-9543	. . SWIVEL, FRONT: (62280) See allowance under item 2-31	10	1			
3-11	P1	B	P1	F	1005-979-3929	. . POST, FRONT SIGHT: (61706)	1	1		(0.1)	(0.1)
3-12	P1	B	P1	F	1005-979-3930	. . DETENT, FRONT SIGHT: (61705)	10	1		(0.1)	(0.1)
3-13	P1	B	P1	F	1005-979-3931	. . SPRING, FRONT SIGHT, DETENT: 20 coils, 0.115 od, 0.750 o/a lg (61709)	10	1		(0.1)	(0.1)
3-14	P1	B	P1	F	1005-979-3924	. CAP, HAND GUARD: (62087)	1	1		0.1	0.1

(1) Figure and Index No.	(2) Source and Maint Codes — USAF (a) Source	(2) USAF (b) Maintenance Repair Level	(2) ARMY (c) Source	(2) ARMY (d) Maintenance Level	(3) Federal Stock No.	(4) Description	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15-Day Maint Allow per 100 Equipment (a) Organizational	(7) (b) Direct Support	(7) (c) General Support
3-15	P1	B	P1	F	1005-979-3923	. PIN, GAS TUBE: (95108)	10	1		(0.1)	(0.1)
3-16	P1	B	P1	F	1005-978-1038	. TUBE, GAS: (61645)	1	1		(0.1)	(0.1)
3-17	P1	B	P1	F	1005-978-1037	. RING, SNAP, HAND GUARD: (90403)	1	1		0.1	0.1
3-18	P1	B	P1	F	1005-978-1036	. SPRING, SLIP RING, HAND GUARD: (61962)	10	1		(0.1)	(0.1)
3-19	P1	B	P1	F	1005-978-1034	. NUT, BARREL: (61902)	1	1		0.1	0.1
3-20	P1	B	P1	F	1005-978-1035	. RING, SLIP, HAND GUARD: (61901)	1	1		0.1	0.1
3-21	P1	B	P1	F	1005-978-1023	. PIN, EJECTION PORT COVER: (61658)	10	1		0.1	0.1
3-22	P1	B	P1	F	1005-978-1024	. RING, RETAINING, EJECTION PORT COVER PIN: (90402)	10	1		0.1	0.1
3-23	P1	B	P1	F	1005-978-1025	. SPRING, EJECTION PORT COVER: (61518)	10	1		0.1	0.1
3-24	P1	B	P1	F	1005-978-1022	. COVER, EJECTION PORT: (62112)	10	1		0.1	0.1
3-25	P1	B	P1	F	1005-978-1031	. PIN, REAR SIGHT WINDAGE DRUM: (95101)	10	1		(0.1)	(0.1)
3-26	P1	B	P1	F	1005-978-1029	. DRUM, REAR SIGHT WINDAGE: (61703)	1	1		0.1	0.1
3-27	P1	B	P1	F	1005-978-1030	. DETENT, REAR SIGHT: (61755)	10	1		(0.1)	(0.1)
3-28	P1	B	P1	F	1005-978-1032	. SPRING, DETENT, REAR SIGHT: 13 coils, 0.118 od, 0.500 o/a lg (61754)	10	1		(0.1)	(0.1)
3-29	P1	B	P1	F	1005-978-1028	. SCREW, REAR SIGHT WINDAGE: (61702)	1	1		0.1	0.1
3-30	P1	B	P1	F	1005-978-1026	. SIGHT, REAR: (61700)	1	1		0.1	0.1
3-31	P1	B	P1	F	1005-978-1027	. SPRING, REAR SIGHT: (61708)	10	1			
3-32			P1	F	1005-017-9553	. PIN, FORWARD ASSIST: XM16E1 (95126)	10	1		(0.1)	(0.1)
3-33			P1	F	1005-017-9541	. SPRING, PLUNGER: XM16E1, 9 coils, 0.420 od, 1.171 o/a lg (62271)	1	1		(0.1)	(0.1)
3-34			P1	F	1005-017-9552	. PIN, PAWL PIVOT: XM16E1 (95113)	10	1		(0.1)	(0.1)
3-35			P1	F	1005-017-9539	. PAWL, FORWARD ASSIST: XM16E1 (62269)	1	1		(0.1)	(0.1)
3-36			P1	F	1005-017-9540	. DETENT, PAWL: XM16E1 (62270)	10	1		(0.1)	(0.1)
3-37			P1	F	1005-523-8084	. SPRING, BOLT: XM16E1, 10 1/2 coils, 0.079 od, 0.290 o/a lg (50381)	10	1		(0.1)	(0.1)
3-38			P1	F	1005-017-9538	. PLUNGER ASSEMBLY: XM16E1 (62266)	1	1		0.1	0.1
3-39	P1D	F			1005-017-9550	. RECEIVER, UPPER: M16 (62306)	1	1		0.1	0.1
3-40			P1	F	1005-017-9542	. RECEIVER, UPPER: XM-16E1 (62278)	1	1		0.1	0.1

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES USAF (a) Source	(b) Maintenance Repair Level	ARMY (c) Source	(d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
						BASIC ISSUE ITEMS (ARMY)					
						ITEMS MAY BE REQUISITIONED AS REQUIRED FOR REPLACEMENT UNDER THEIR INDIVIDUAL STOCK NUMBERS					
					1005-073-9421	RIFLE, 5.56-MM: XM16E1 w/e (8427000)					
						COMPOSED OF:					
						1-RIFLE, 5.56-MM: XM16E1 (62400)					
					1005-992-6676	1-BIPOD: XM3 (62122)					
					1005-017-9647	1-CASE, BIPOD: (62309)					
					1005-070-7813	1-BRUSH, CLEANING, SMALL ARMS: caliber .22, M6 (11010021)					
					9150-248-3480	1-GREASE, RIFLE: lubr, (RG) 5cc cntr (5621059)					
					1005-056-2237	6-MAGAZINE ASSEMBLY: aluminum (20 cartridge capacity) (62103)					
					1005-070-7812	1-ROD, CLEANING: M11 (11010020)					

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES — USAF (a) Source	(b) Maintenance Repair Level	ARMY (c) Source	(d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue /DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
						(TOOLS AND EQUIPMENT)					
						ITEMS MAY BE REQUISITIONED AS REQUIRED FOR REPLACEMENT UNDER THEIR INDIVIDUAL STOCK NUMBERS					
					4933-056-7106	TOOL SET, DIRECT AND GENERAL SUPPORT MAINTENANCE (8426685)	1				
						COMPOSED OF:					
					4933-070-9152	1-WRENCH, COMBINATION: barrel nut and flash suppressor (11010033)					
					4933-070-9151	1-FIXTURE, BARREL REMOVER: vise jaws (11010032)					
				R	4933-070-7815	1-GAGE, FIRING PIN PROTRUSION: (7799735)					
				R	4933-070-7814	1-GAGE, HEADSPACE: field type (7799734)					
					1005-288-3565	SWAB, SMALL ARMS CLEANING: cotton, 1000 in pkg	PKG		(1)	(1.0)	
						CLEANING AND PRESERVING MATERIALS					
						The following items are requisitioned as required					
					8020-244-0153	BRUSH, ARTIST: metal ferrule, flat, chisel edges, 7/16 w, 1-1/8 lg, exposed bristle (96906-16840)					
					7920-205-2401	BRUSH, CLEANING, TOOL AND PARTS: rd 100 percent tampico fiber, 1-1/16 at ferrule brush dia, 2-7/8 clear of block brush lg (96906-16746-29)					

(1) Figure and Index No.	(2) SOURCE AND MAINT CODES — USAF (a) Source	(b) Maintenance Repair Level	ARMY (c) Source	(d) Maintenance Level	(3) FEDERAL STOCK NO.	(4) DESCRIPTION	(5) Unit of Issue/DS & GS Support	(6) Quantity Incorporated in Unit	(7) 15 - DAY MAINT ALLOW PER 100 EQUIPMENT (a) Organizational	(b) Direct Support	(c) General Support
						CLEANING COMPOUND, SOLVENT: Small arms bore cleaner, solution type (PD 126)					
					6850-682-6835	2 oz can					
					6850-682-6834	6 oz can					
					6850-682-6833	1 qt can					
					6850-682-6832	1 gal can					
					5350-221-0872	CLOTH, ABRASIVE: Crocus, ferric oxide and quartz, jean-cloth-backing, closed coating, 9 w, 11 lg (42-C-20420-50)					
					6850-281-1985	DRY CLEANING SOLVENT: (SD) (1 gal can)					
					8010-582-5382	LACQUER: Black (jet) lusterless, type I, color 37038, 16 oz, aerosol can, Spec TT-L-50D, type I, nitrocellulose base					
						LUBRICATING OIL, GENERAL PURPOSE: (PL special)					
					9150-273-2389	4 oz can					
					9150-231-6689	1 qt can					
					9150-292-9689	LUBRICATING OIL, WEAPONS: (LAW) for below zero operations (1 qt can)					
					7920-205-1711	RAG, WIPING: Cotton, for general purpose use (96906-16746-131) (50 lb bale)					

CHAPTER X
MAINTENANCE ALLOCATION CHART

10-1. PURPOSE.

To allocate specific maintenance operations to the proper level on the basis of time and skills normally available to various maintenance levels and influenced by maintenance policy and sound practices as outlined in AR 750-6 (Army).

10-2. EXPLANATION AND DEFINITIONS.

The maintenance allocation chart designates overall responsibility for the maintenance function on an end item or assembly. Repair and/or overhaul of major assemblies is designated by authority of the Army commander representative, except for the specific repair subfunctions listed in the maintenance allocation charts. Deviation from maintenance operations allocated in the maintenance allocation charts is authorized only upon approval of the Army commander representative.

SERVICE — To clean, preserve, and lubricate.

REPLACE — To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

REPAIR — To restore to a serviceable condition by replacing unserviceable parts or by any other action required utilizing tools, equipment and skills available, to include riveting, straightening, adjusting, etc.

SYMBOL "X" — The symbol "X" placed in the appropriate column indicates the level responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Maintenance levels higher than the level marked by "X" are authorized to perform the indicated operation.

MAINTENANCE ALLOCATION CHART

(1) Group No.	(2) Component and related operations	(3) Maintenance Levels O/C	O	DS	GS	D
1	Magazine:					
	Service	X				
	Repair			X		
	Replace	X				
2	Bolt Carrier Group:					
	Service	X				
	Repair		X			
3	Upper Receiver Group:					
	Service	X				
	Repair			X		
4	Barrel and Front Sight Assembly:					
	Service	X				
	Repair			X		
	Replace			X		

MAINTENANCE ALLOCATION CHART - continued

(1) Group No.	(2) Component and related operations	(3) Maintenance Levels				
		O/C	O	DS	GS	D
5	Rear Sight:					
	Service	X				
	Repair			X		
6	Hand Guard Assembly:					
	Service	X				
	Replace			X		
7	Lower Receiver Group:					
	Service	X				
	Repair			X		
8	Stock Assembly:					
	Service	X				
	Repair			X		
	Replace			X		
9	Rifle Bipod					
	Service	X				
	Replace			X		

10-3. EXPLANATION OF MAINTENANCE LEVELS.

O/C	Operator or Crew
O	Organizational
DS	Direct Support
GS	General Support
D	Depot

CHAPTER XI
BAYONET-KNIFE, M7 AND BAYONET-KNIFE SCABBARD, M8A1

11-1. GENERAL.

11-2. The bayonet-knife (figure 1-2) is utilized for close combat, guarding of prisoners, riot duty, etc. It can also be used as a general utility knife. The blade has a full cutting edge on the bottom and a 3 1/8" cutting edge on top running from the point. The handle fits comfortably and has a knurled surface for a firm grip. The bayonet-scabbard (figure 1-2) is used to carry the bayonet-knife when not being used on the rifle.

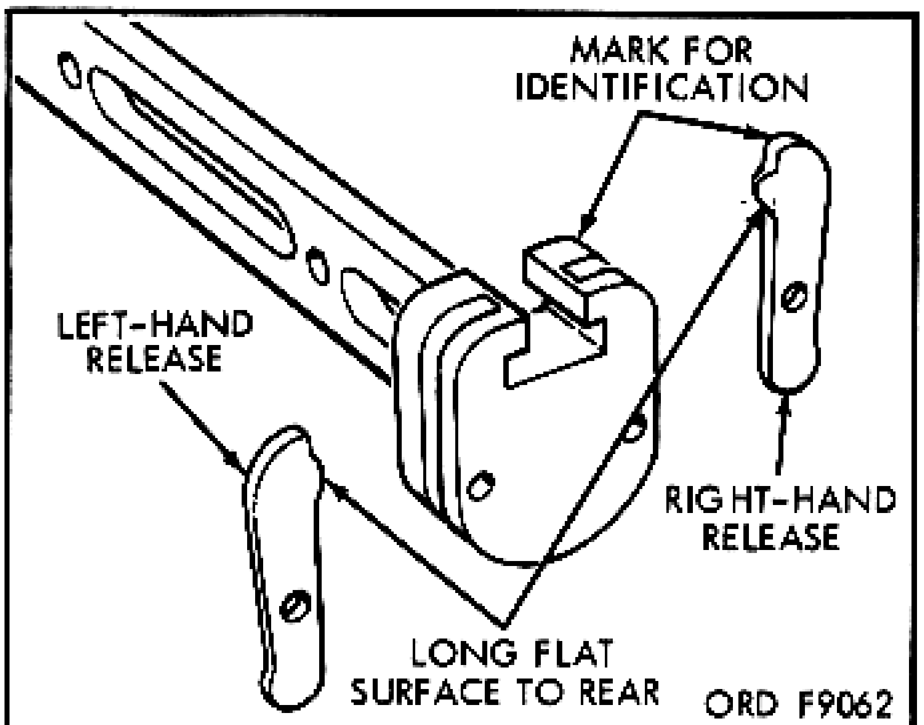


Figure 11-1. Bayonet-Knife Marking and Identification of Releases

11-3. BAYONET.

11-4. INSTALLATION.

11-5. Refer to figure 3-3.

11-6. TROUBLE SHOOTING.

11-7. If the bayonet-knife fails to slide over the bayonet stud or can be removed from the rifle without compressing the releases, the releases are probably incorrectly assembled. If the releases are assembled correctly, inspect for a weak or broken release spring.

11-8. DISASSEMBLE/ASSEMBLE. Refer to paragraph 3-28B for operator (user) maintenance.

Note

Prior to disassembly, it is recommended that the right hand release and plate be marked to assist in identification when assembling the left and right hand releases (Figure 11-1).

11-9. Remove screws (1, figure 11-2) and lock washers (2). Remove left (3) and right-hand grips (4). Remove spring pins (5) and releases (6 & 7). Remove spring (8).

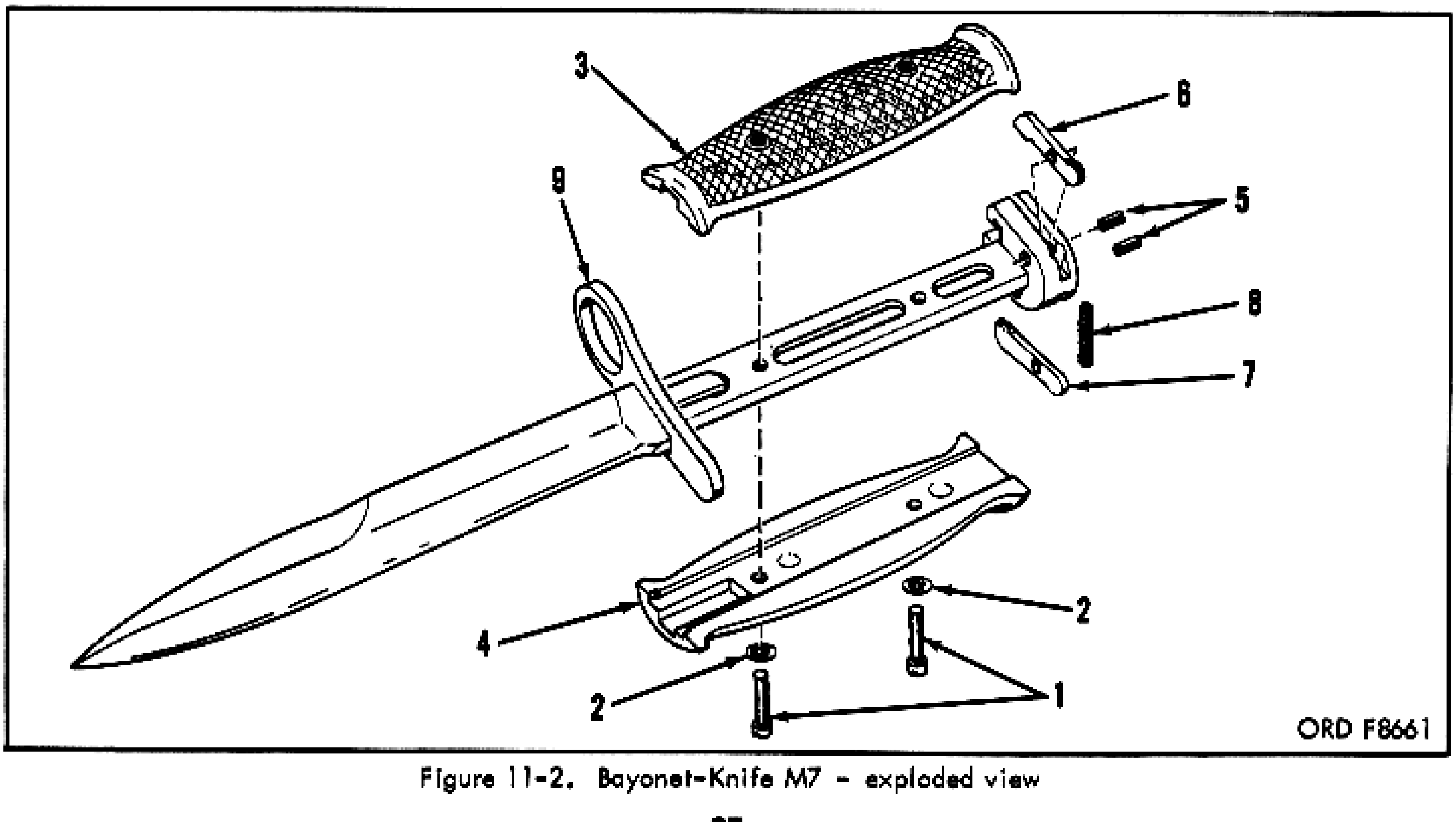


Figure 11-2. Bayonet-Knife M7 - exploded view

11-10. Assemble in reverse order of disassembly.

Note

The grips may be installed on either side of bayonet-knife but the right-hand grip (4) has the recesses for the screw heads.

11-11. CLEANING.

11-12. Clean all parts of grease, oil, and dirt.

11-13. INSPECT AND REPAIR.

a. Replace screws, if threads are stripped.

b. Replace cracked grips or replace left-hand grip, if threads in grip are stripped.

c. Replace spring pin, if worn or damaged.

d. Replace spring if, kinked, set, or broken.

e. Remove nicks and dents, as required, by grinding and/or stoning.

f. If wear is noted on the release camming area and positive retention to the rifle is questionable, replace as required. If binding is noted due to a bent release, repair by straightening or replace.

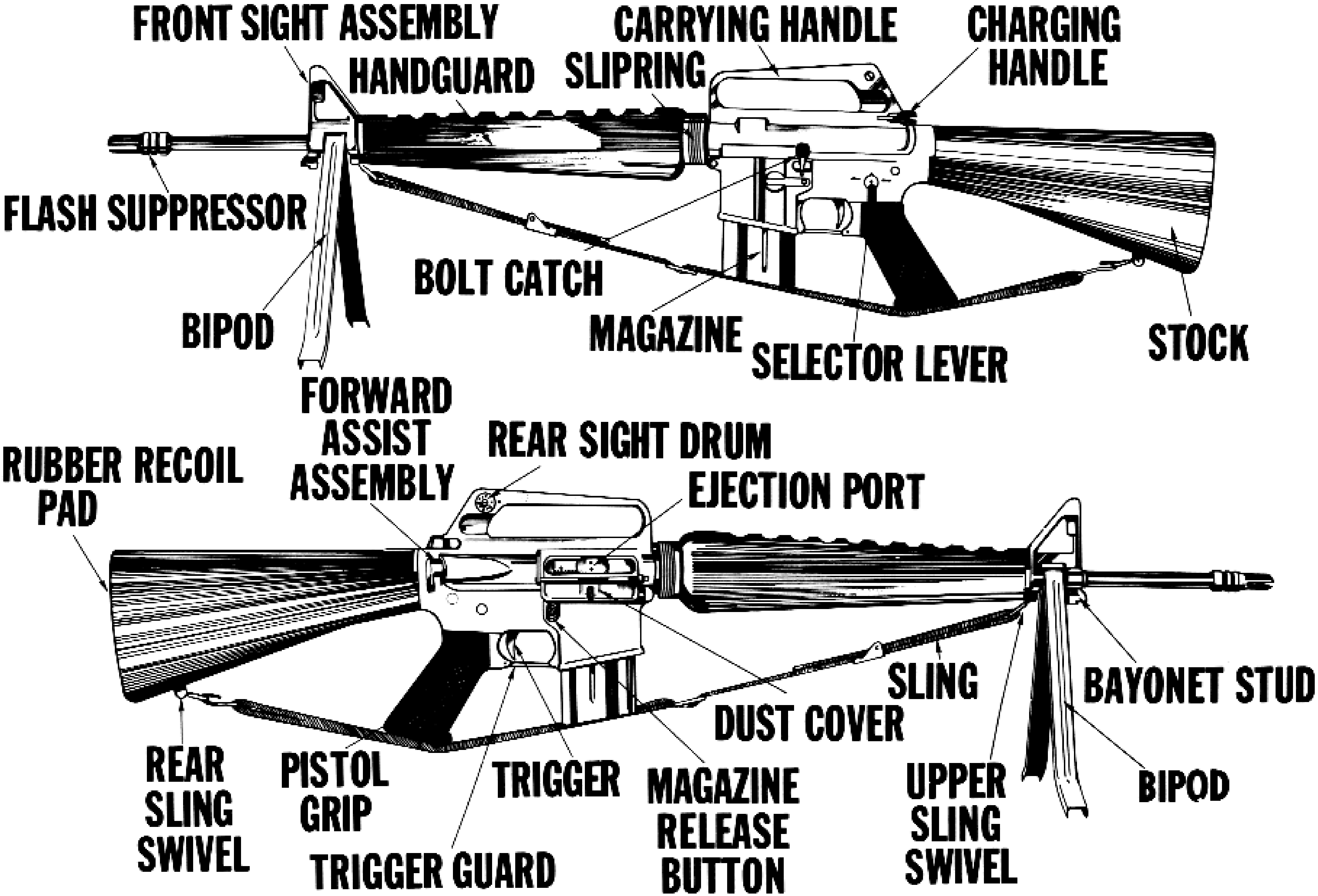
11-14. BAYONET-KNIFE SCABBARD, M8A1.

11-15. Metal parts will be dark. If finish of metal is worn, a rust inhibiting enamel or flat black lacquer may be applied to metal parts.

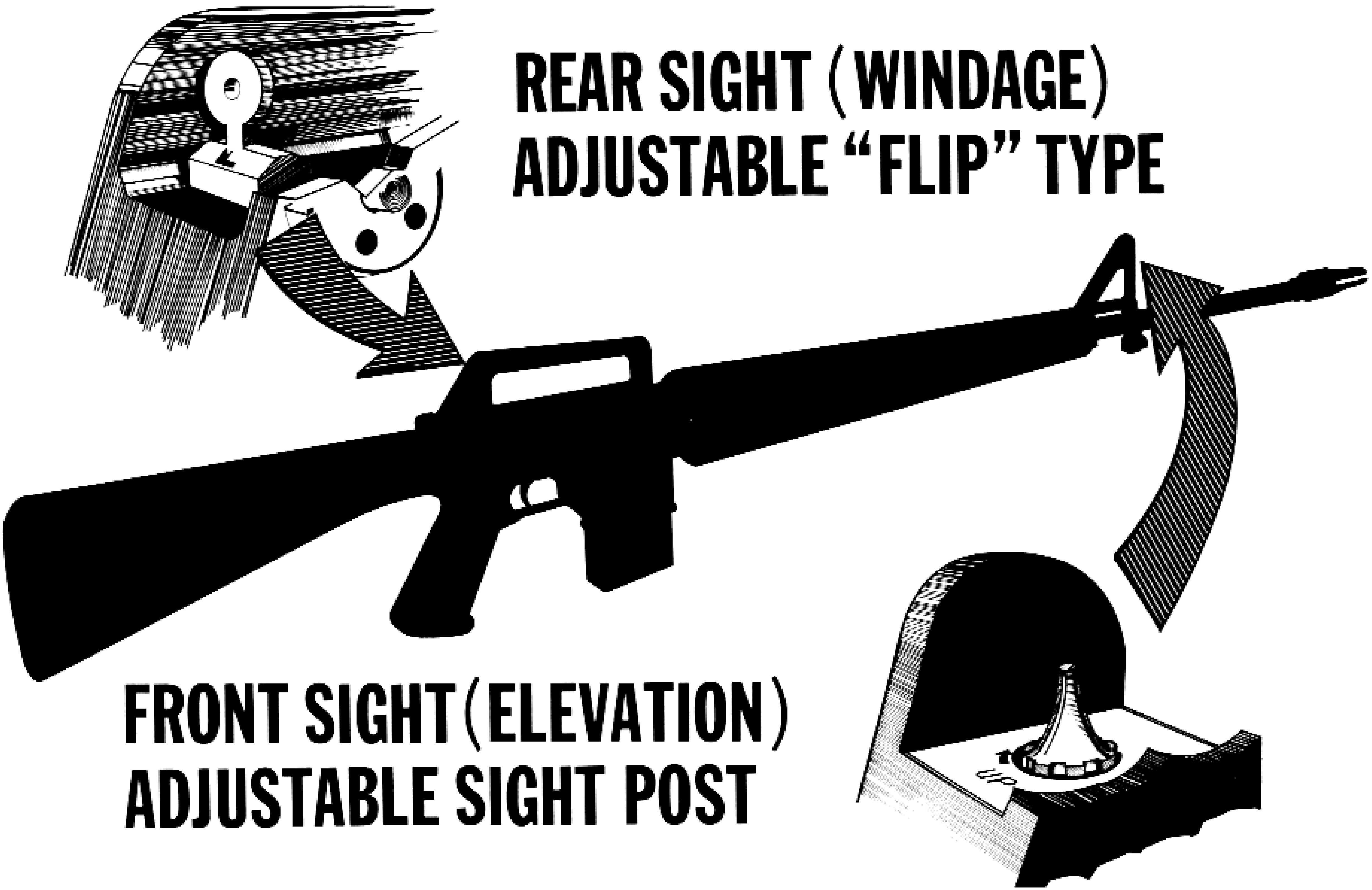
11-16. If the scabbard is chipped exposing the fabric or the surface is scratched or marred, smooth as required and paint with olive drab lusterless enamel.

11-17. Clean and/or replace broken or damaged restraining lace.

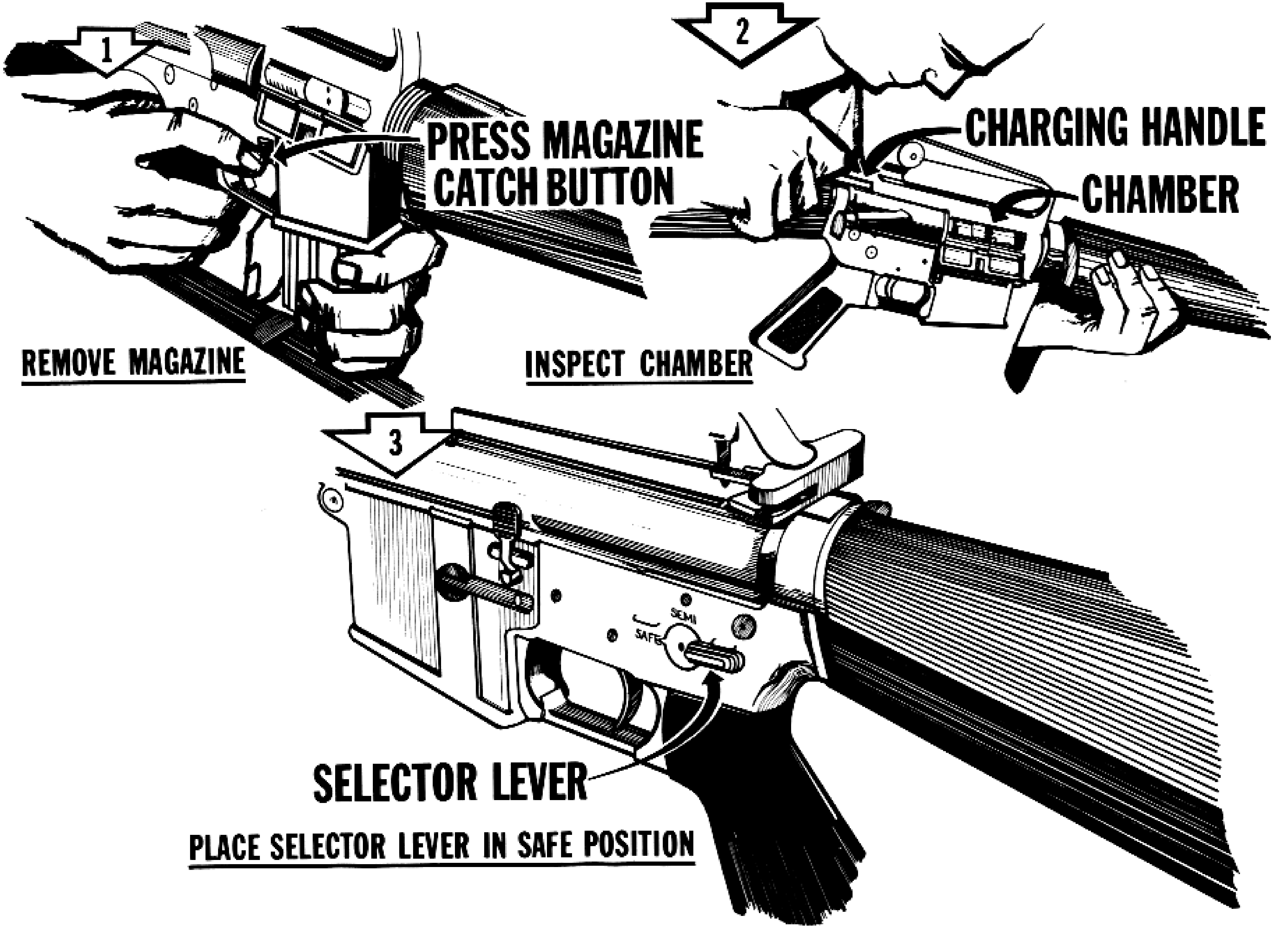
RIFLE, 5.56-mm, M16, RIGHT AND LEFT SIDE VIEWS



FRONT AND REAR SIGHTS



CLEARING THE RIFLE



REMOVING THE TAKEDOWN PIN



CAUTION: MUST BE IN SAFE POSITION TO PREVENT DAMAGE TO AUTOMATIC SEAR

REMOVING THE RECEIVER PIVOT PIN



UPPER AND LOWER RECEIVER GROUPS

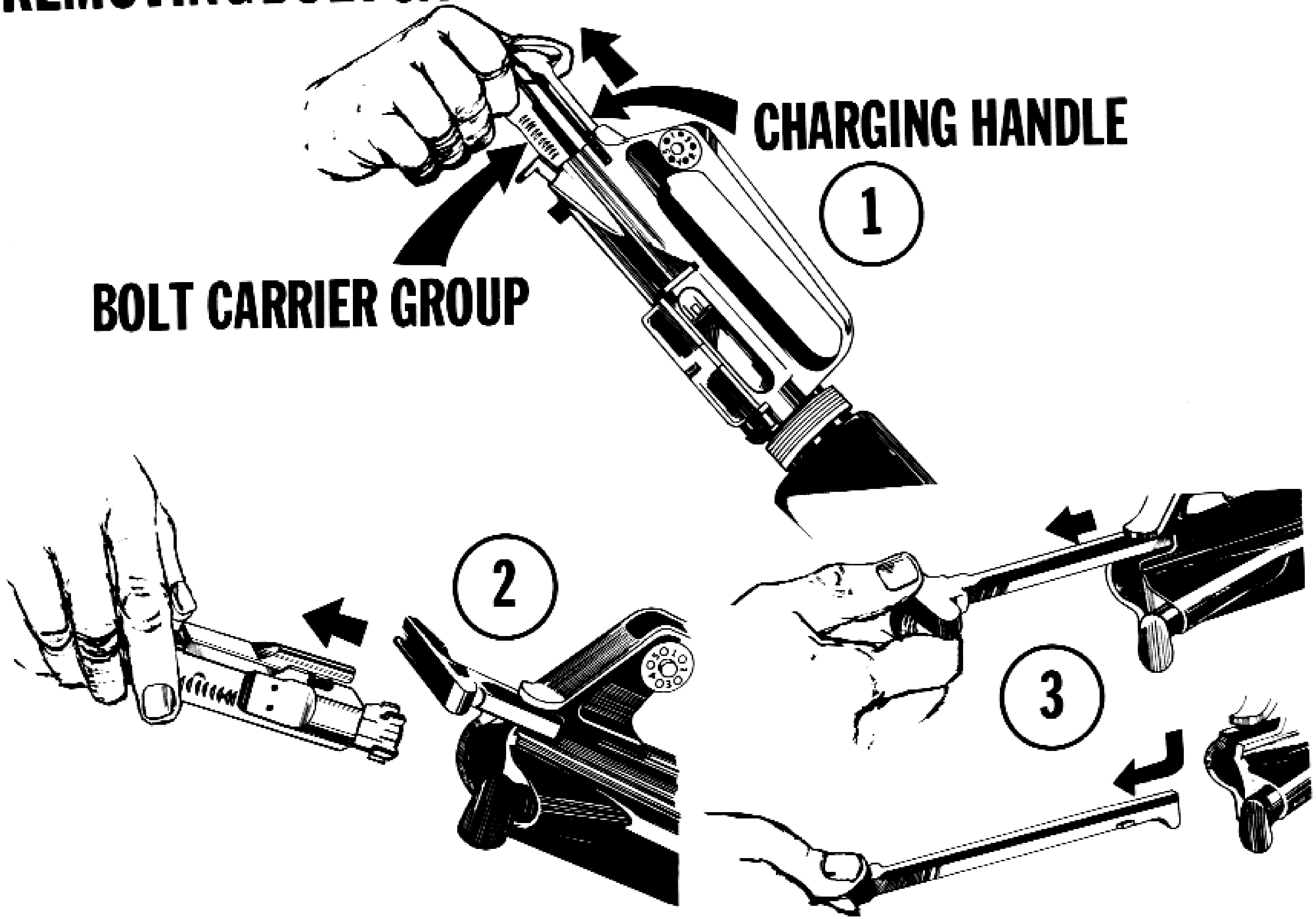
UPPER RECEIVER GROUP



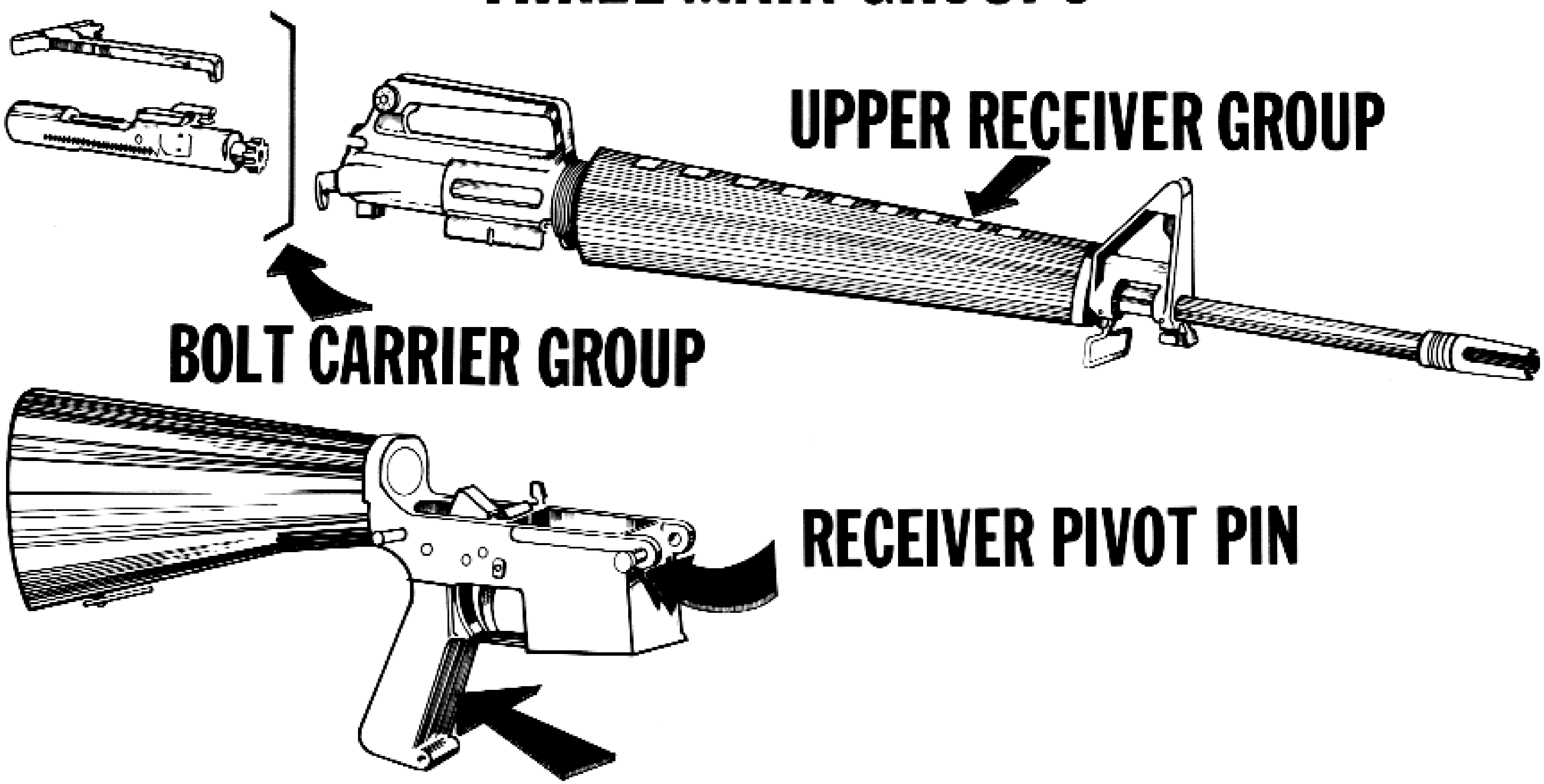


LOWER RECEIVER GROUP

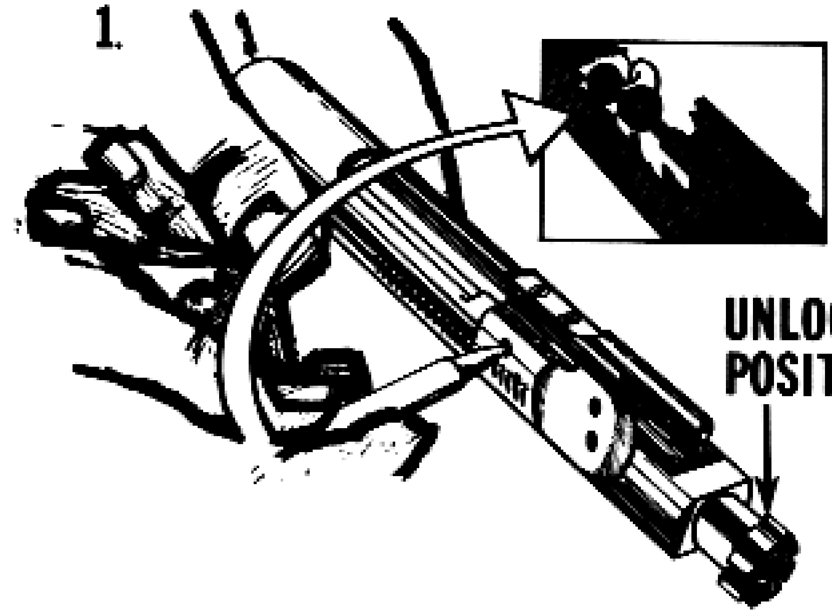
REMOVING BOLT CARRIER GROUP AND CHARGING HANDLE

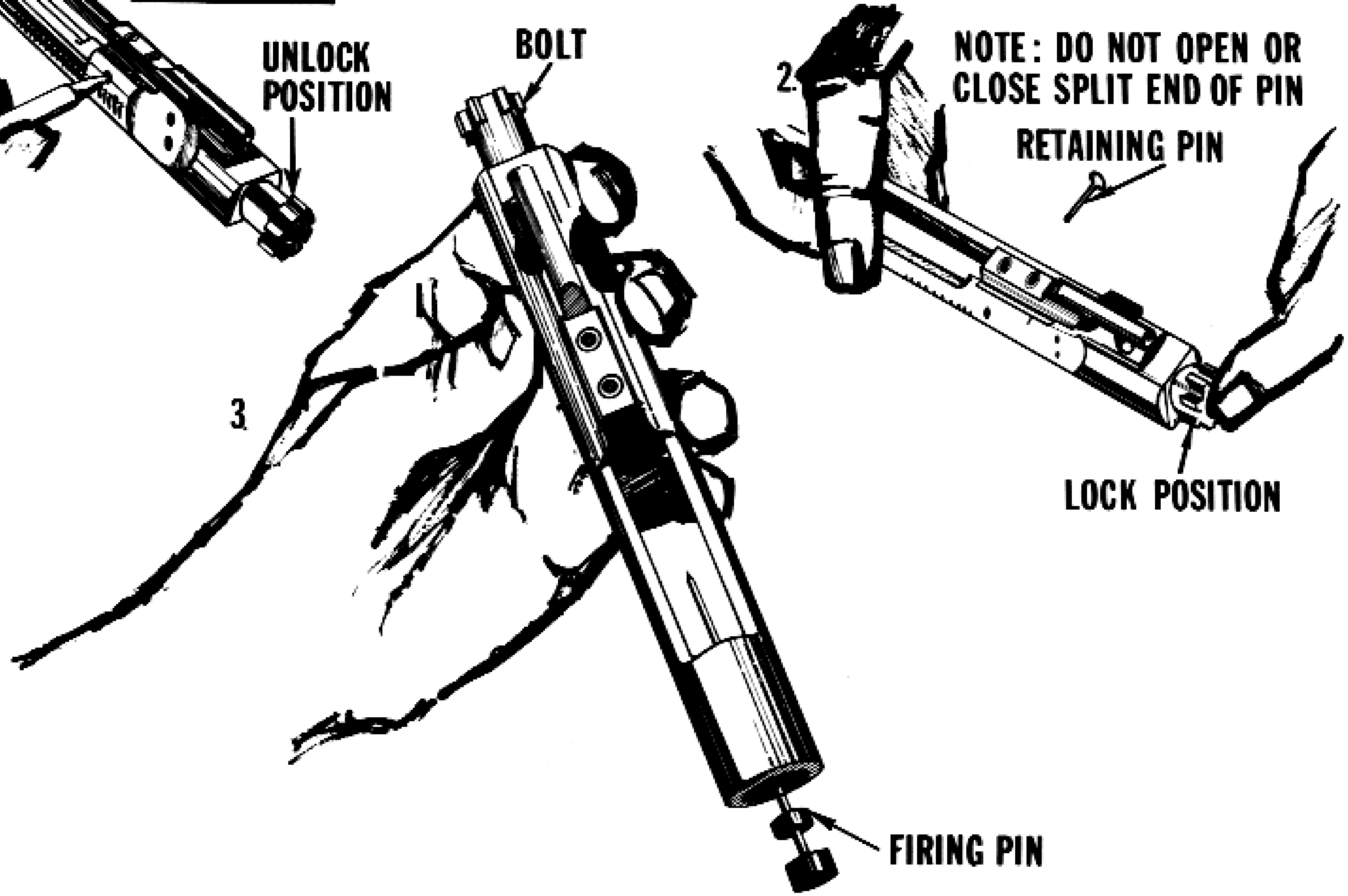


THREE MAIN GROUPS

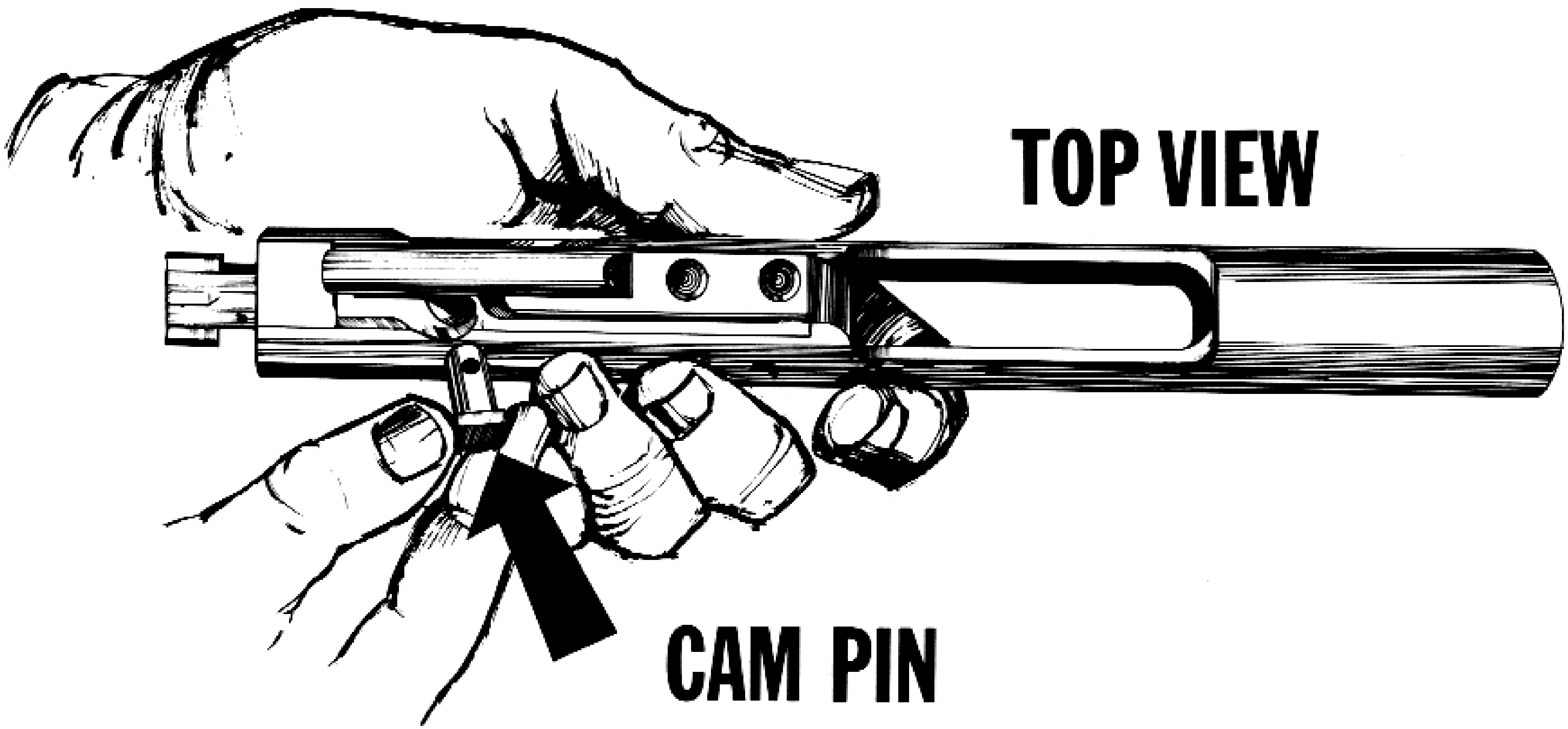


SEPARATION OF THE FIRING PIN RETAINING PIN, AND THE FIRING PIN FROM THE BOLT CARRIER GROUP

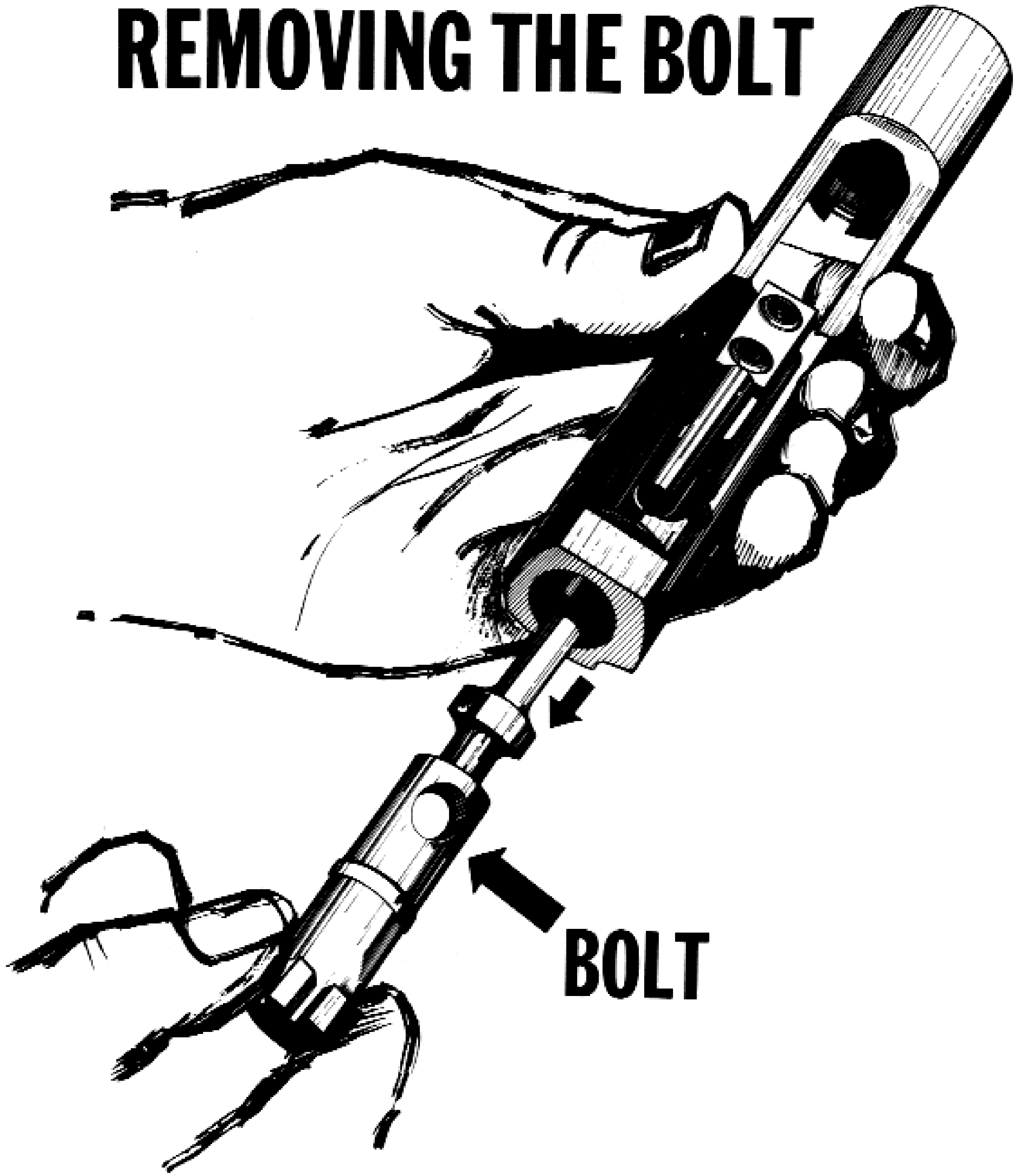




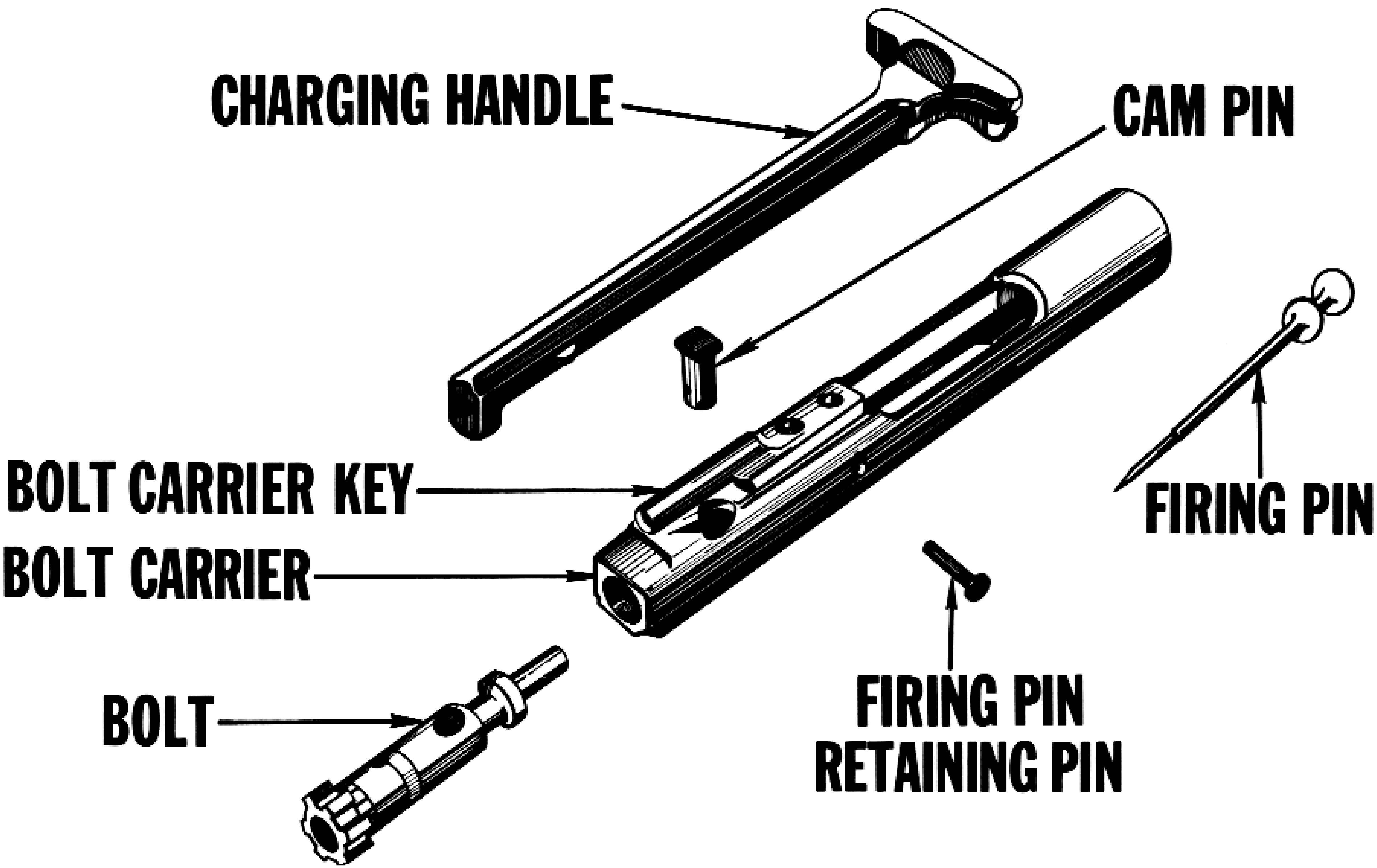
REMOVING THE CAM PIN FROM THE BOLT CARRIER GROUP



REMOVING THE BOLT

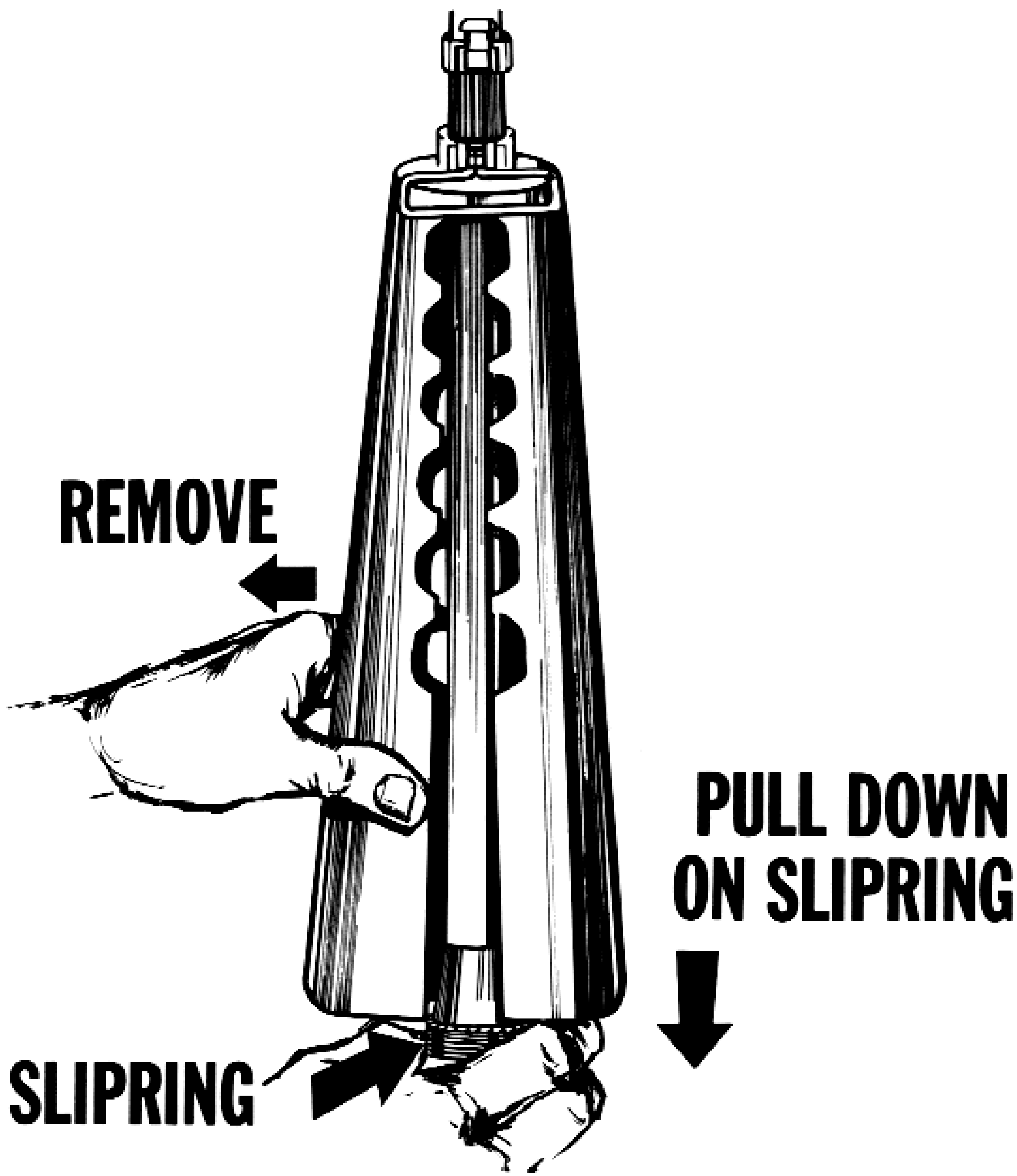


BOLT CARRIER GROUP DISASSEMBLED

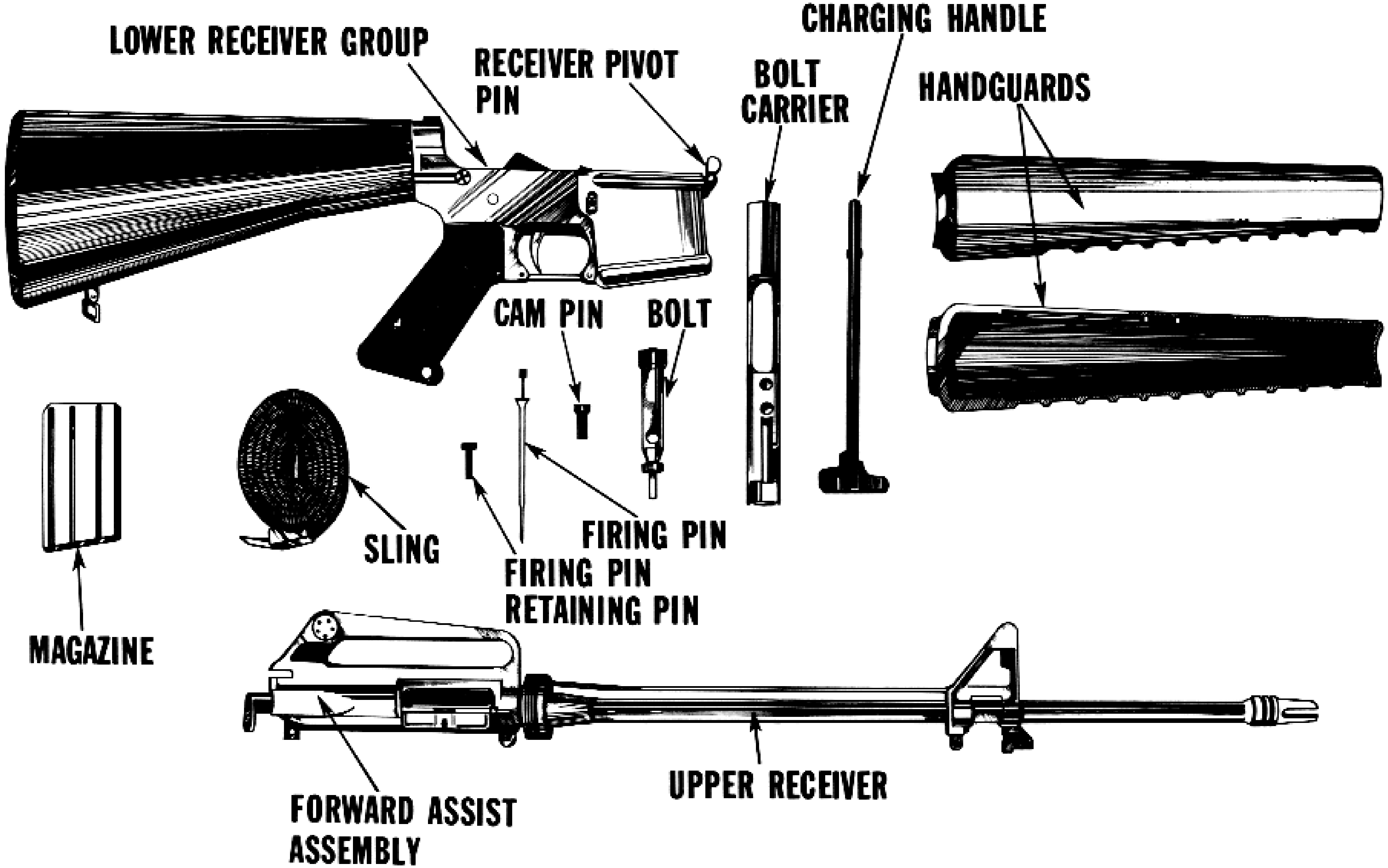


AR-15, CAR-15, M16

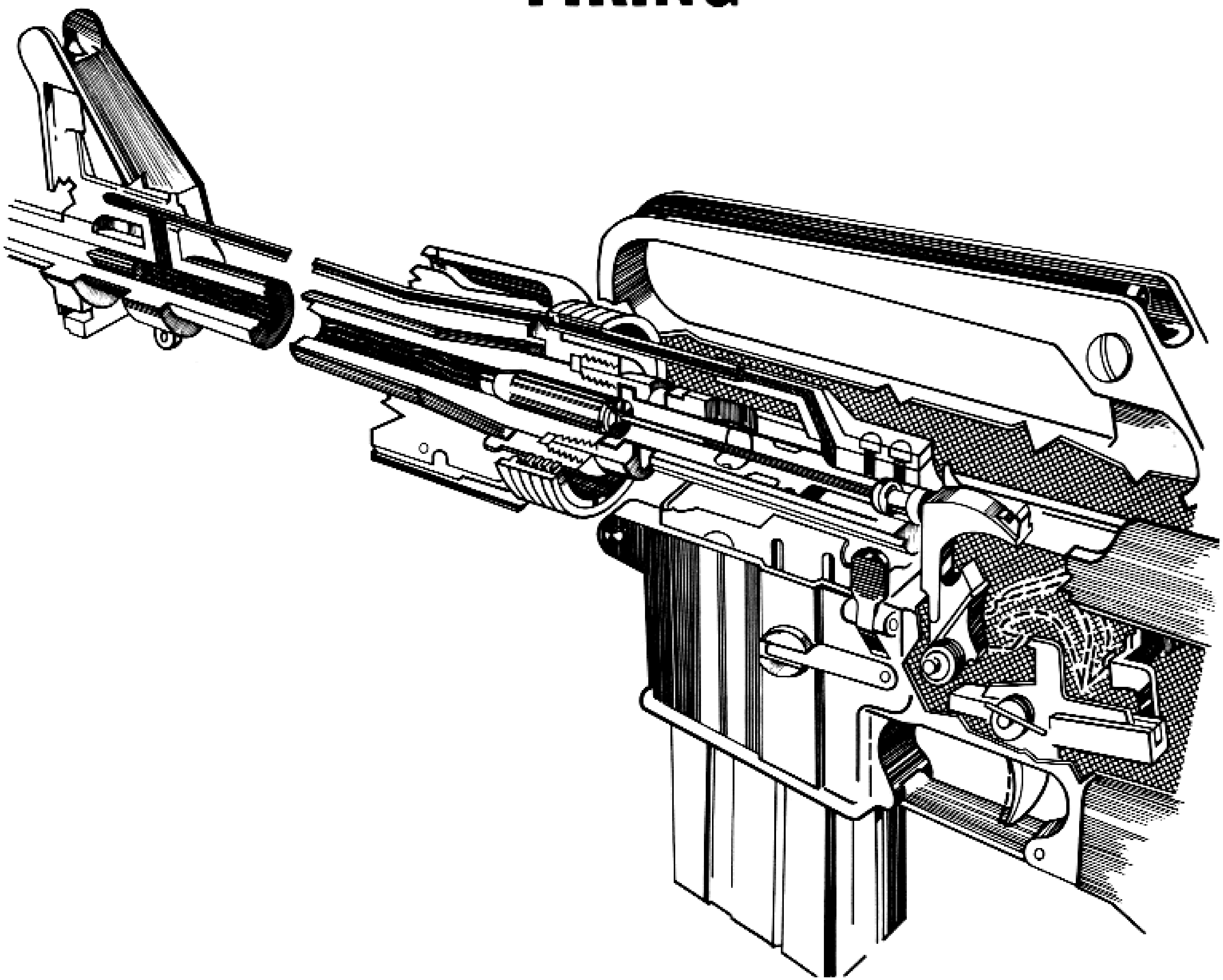
REMOVING THE HANDGUARDS



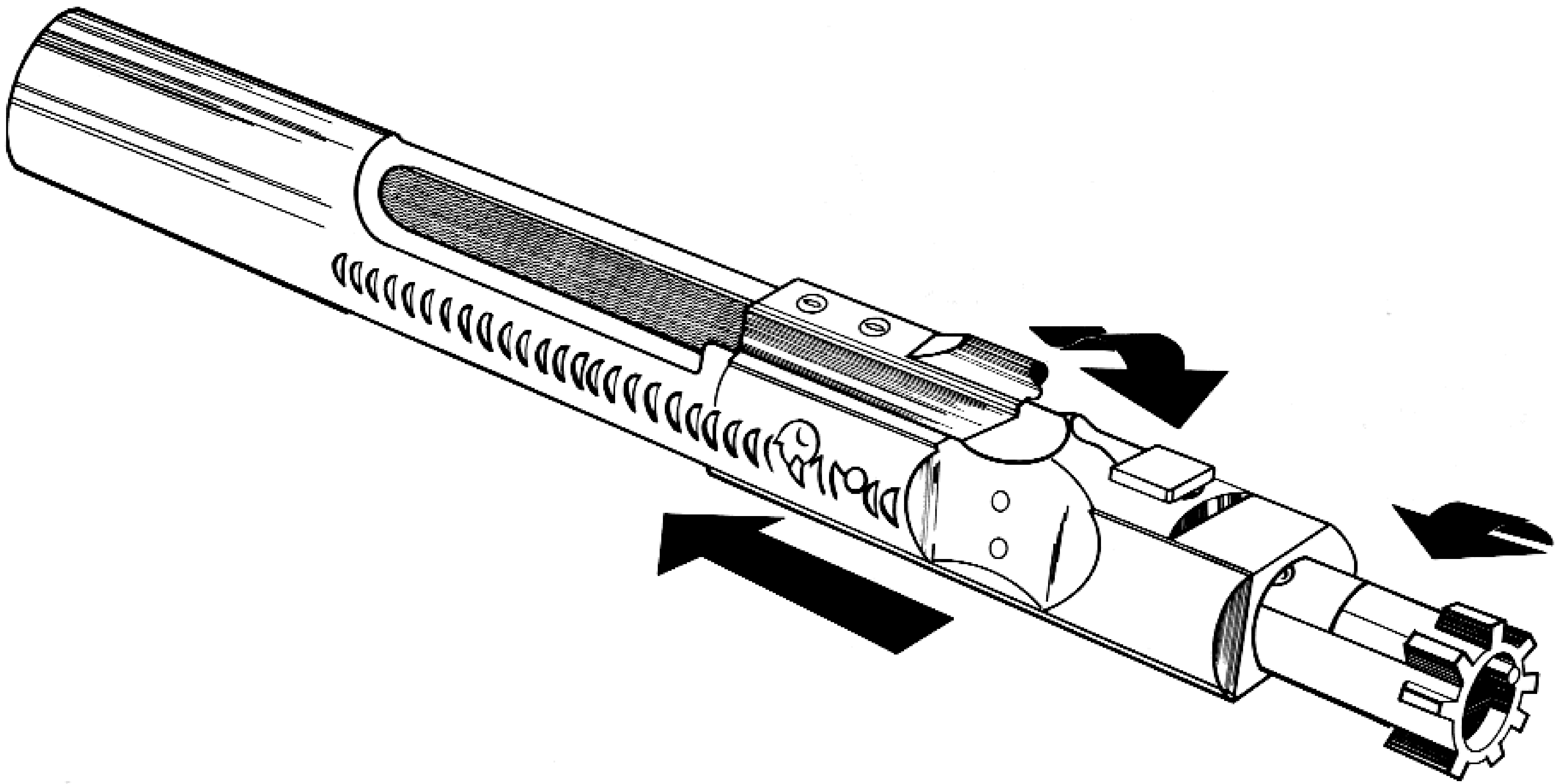
THE M16 RIFLE, FIELD STRIPPED



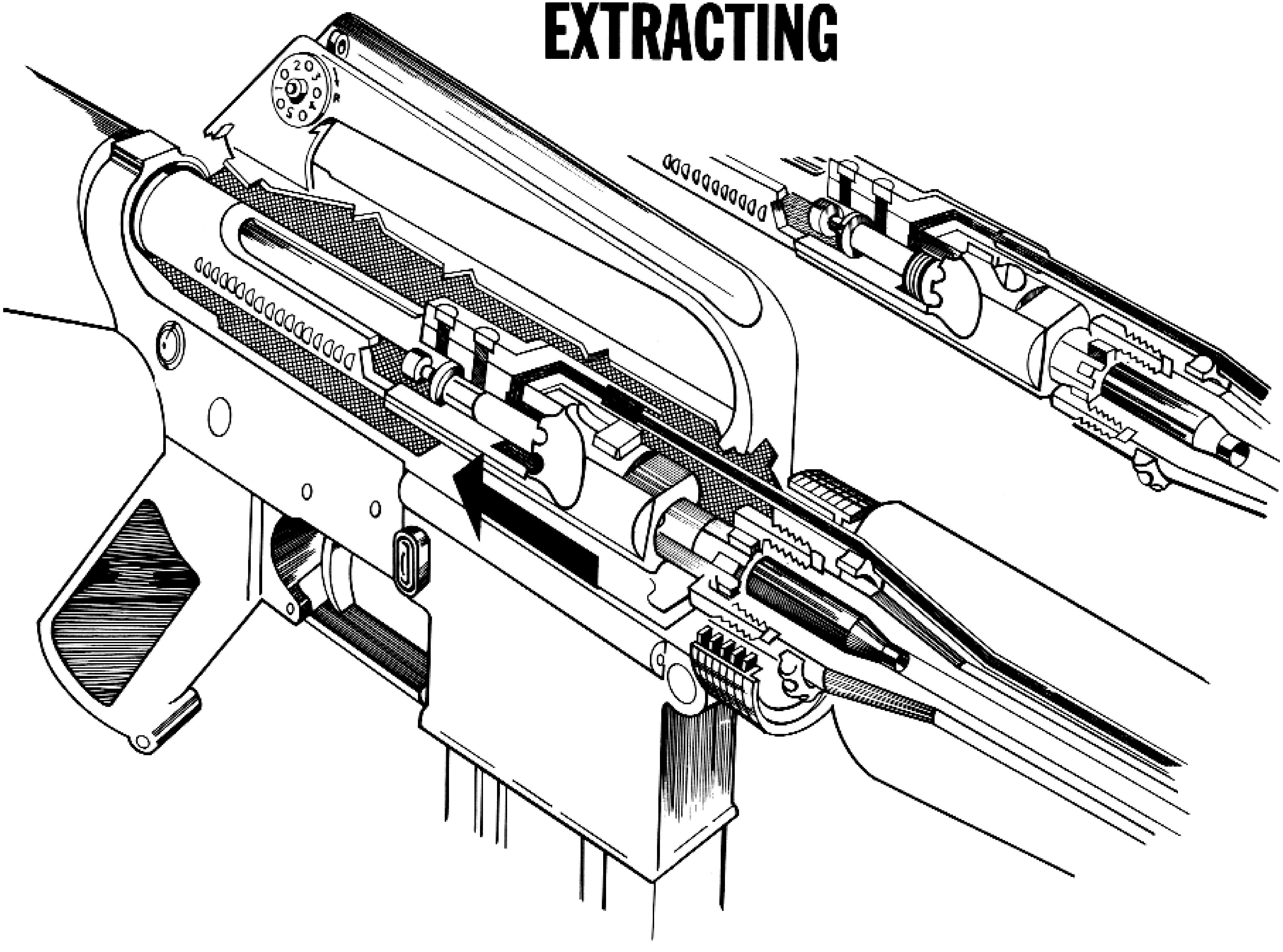
FIRING



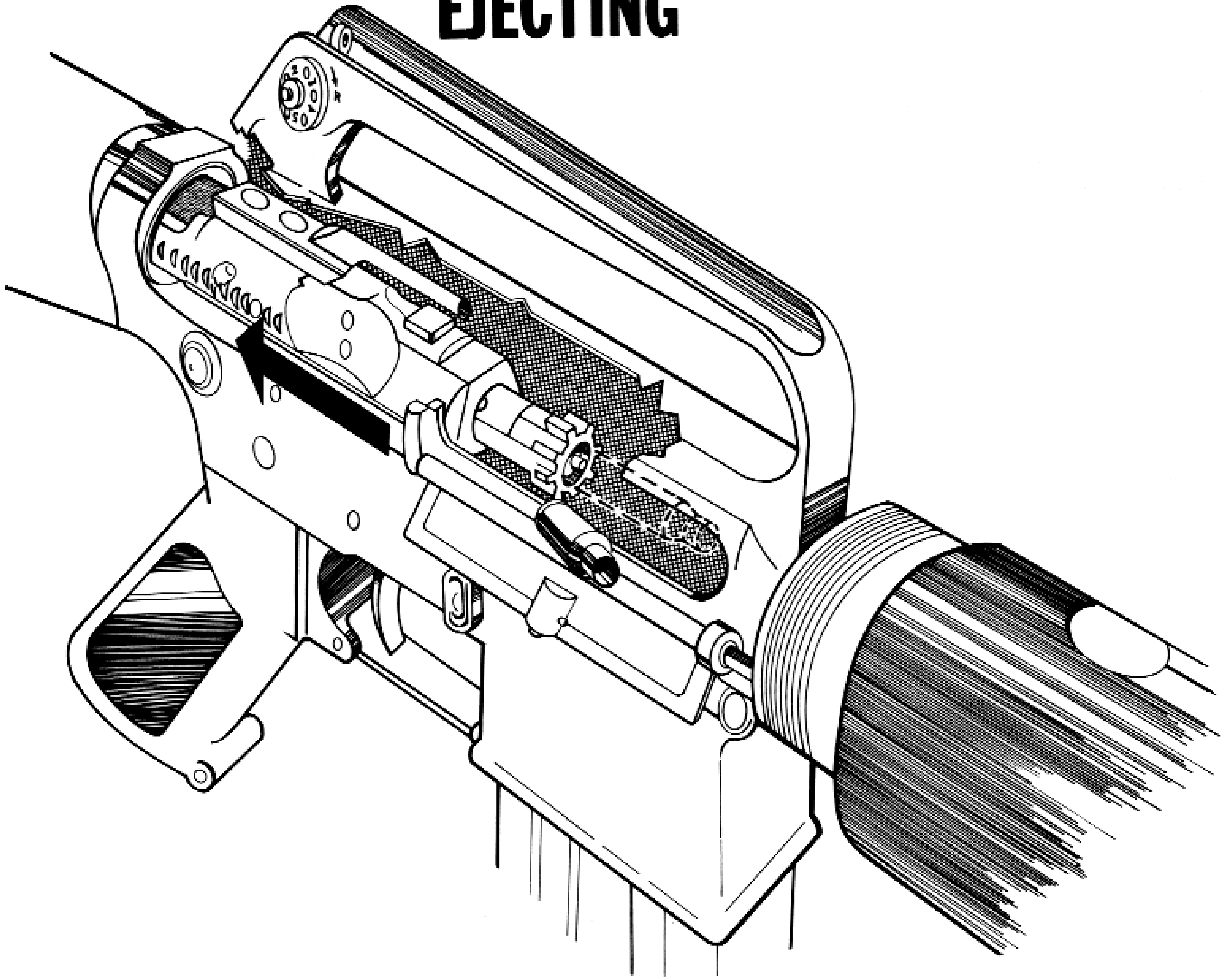
UNLOCKING



EXTRACTING

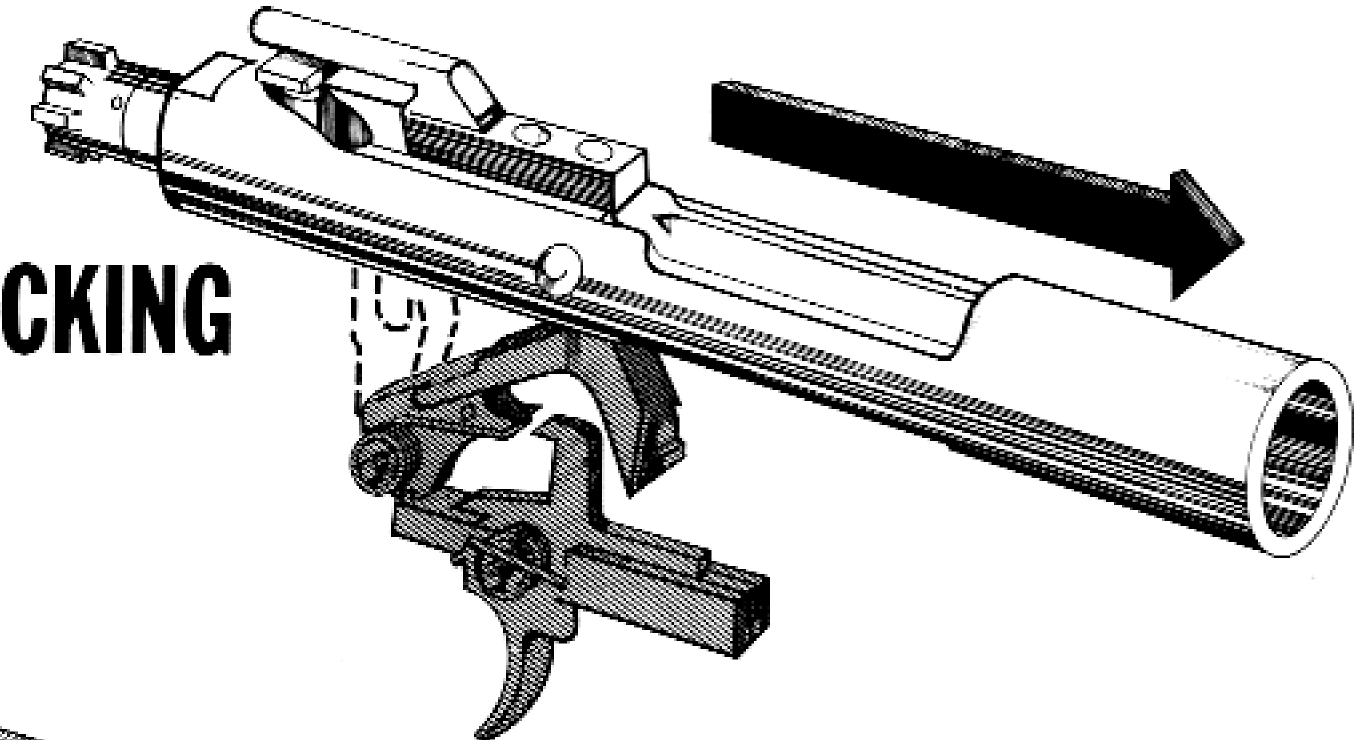


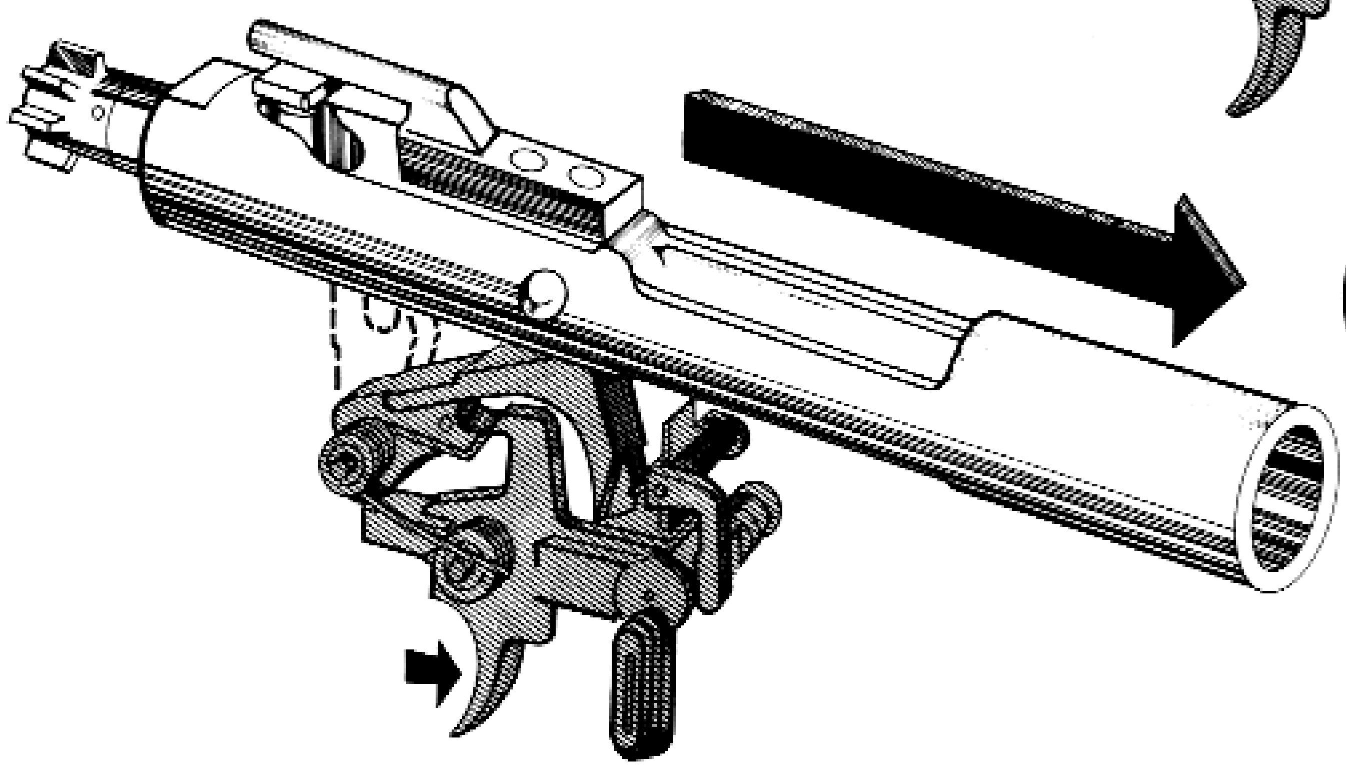
EJECTING



COCKING

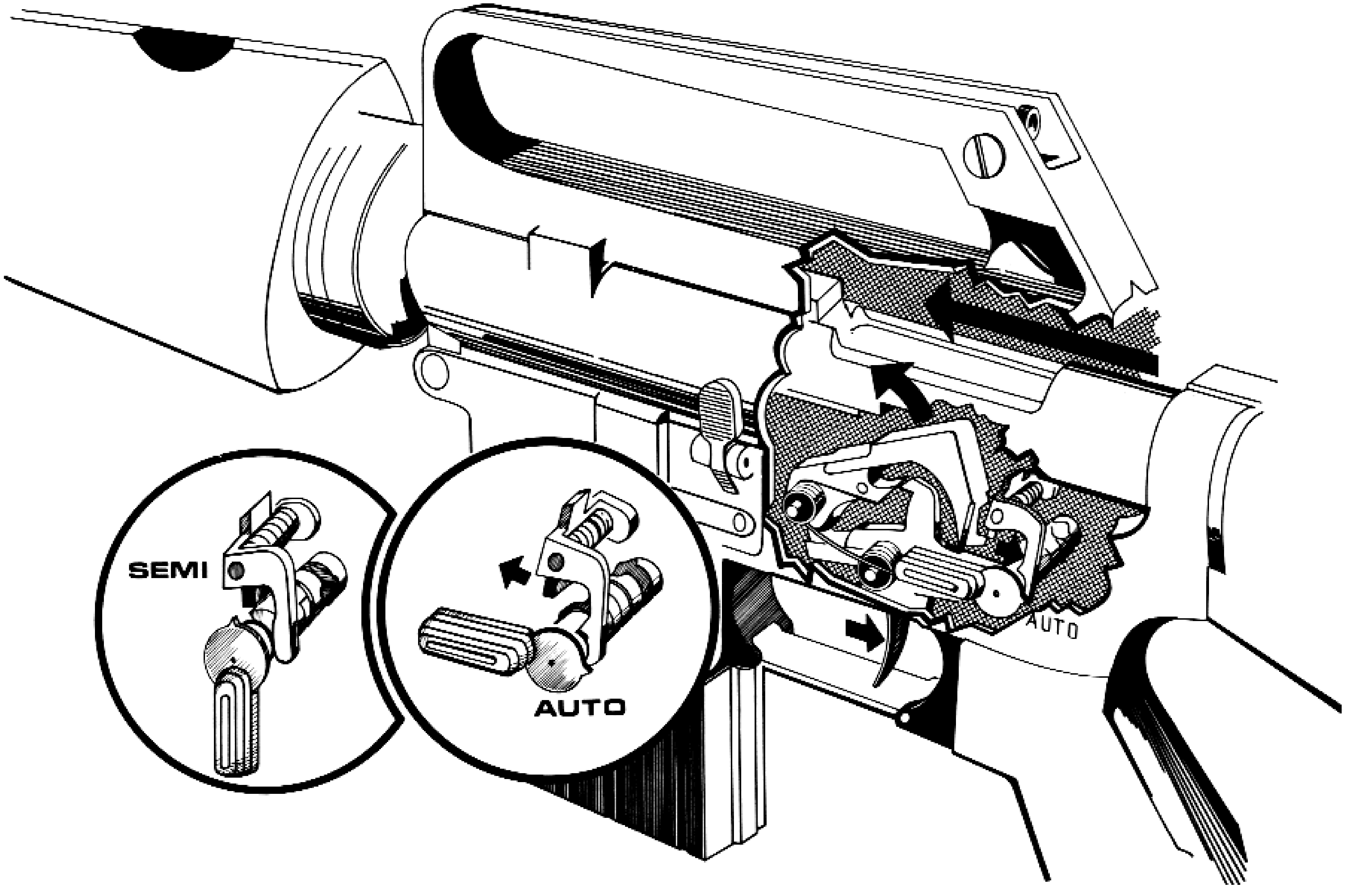
NORMAL COCKING



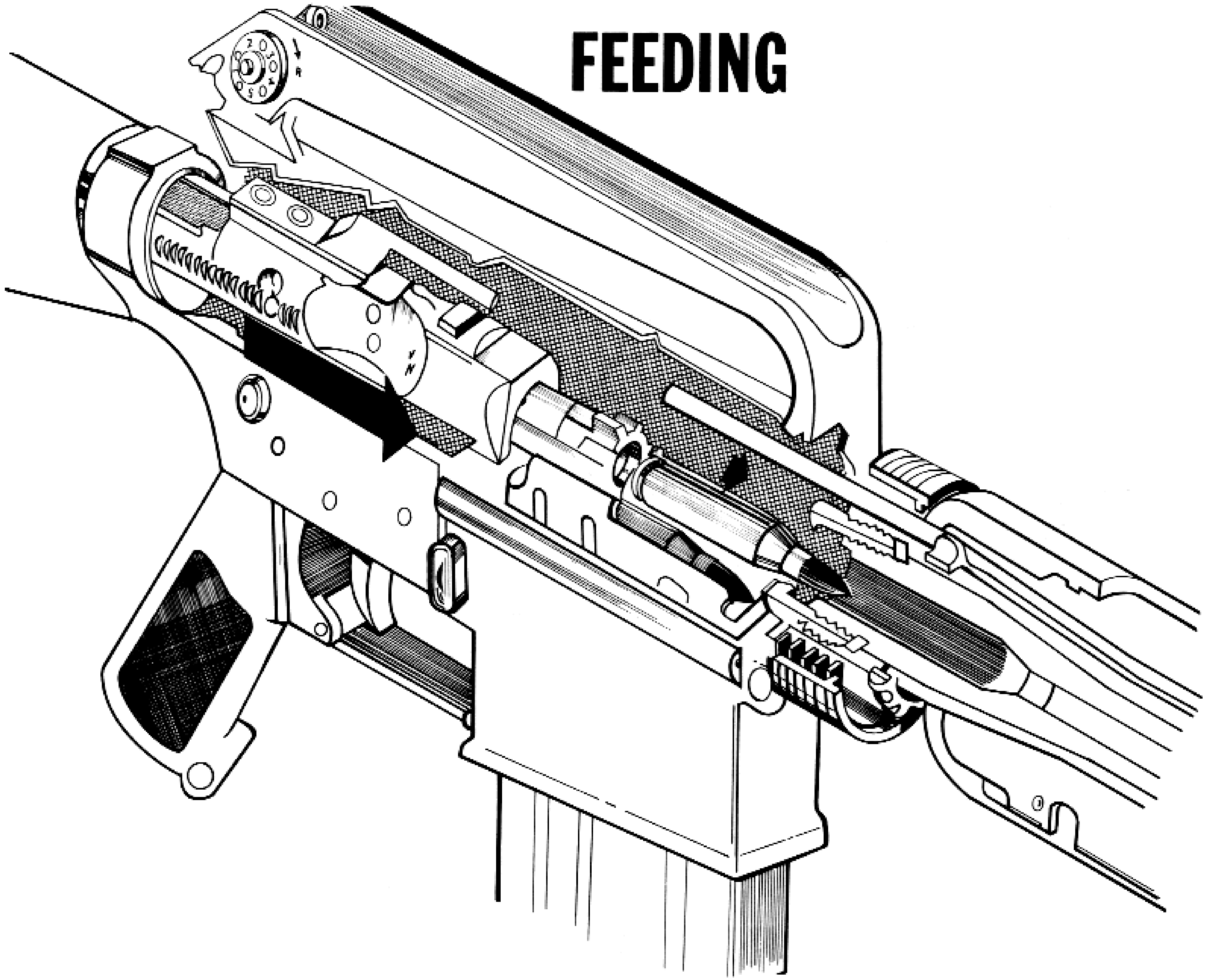


COCKING WHEN TRIGGER IS HELD BACK DURING SEMI-AUTOMATIC FIRING

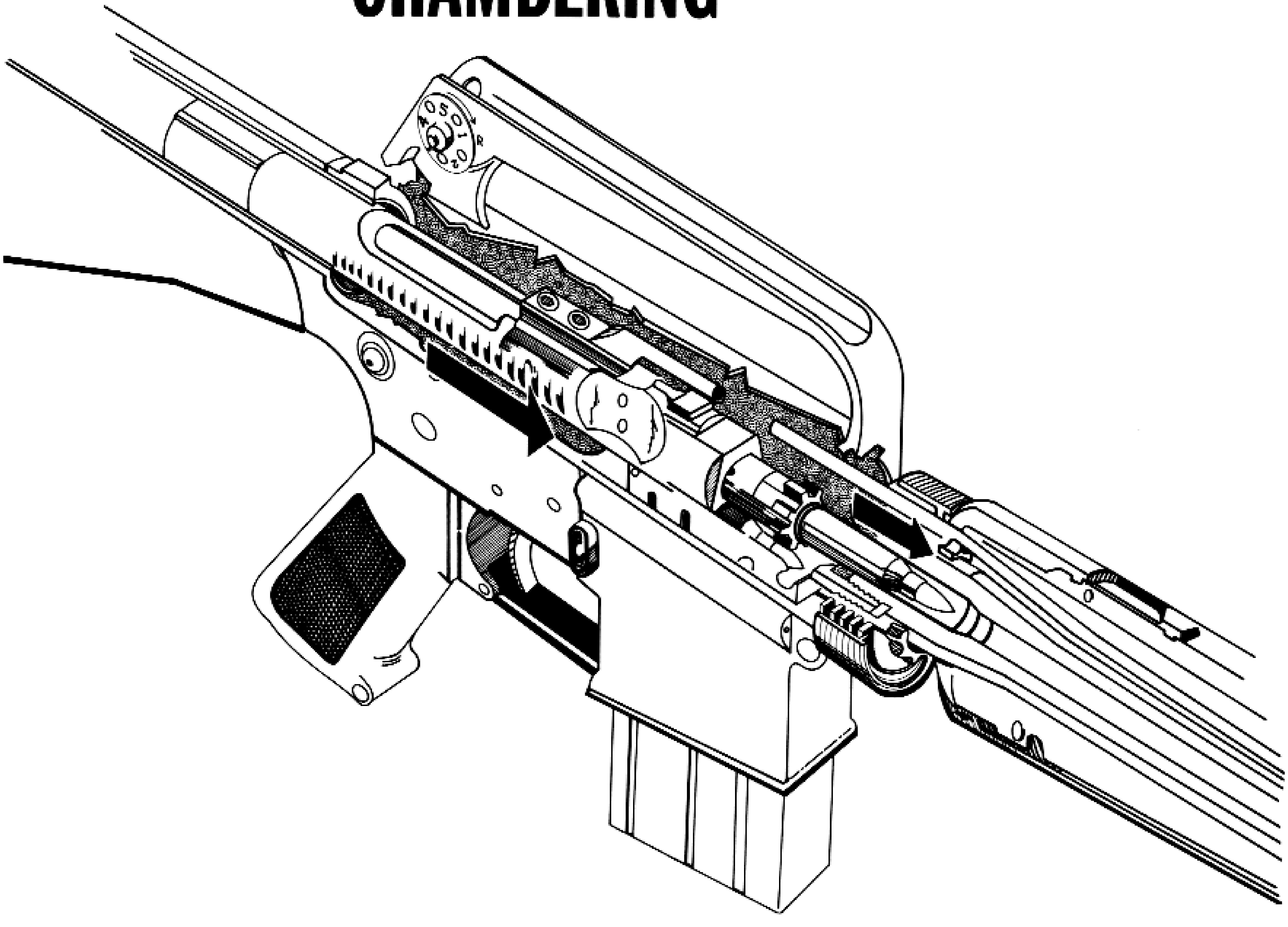
AUTOMATIC SEAR



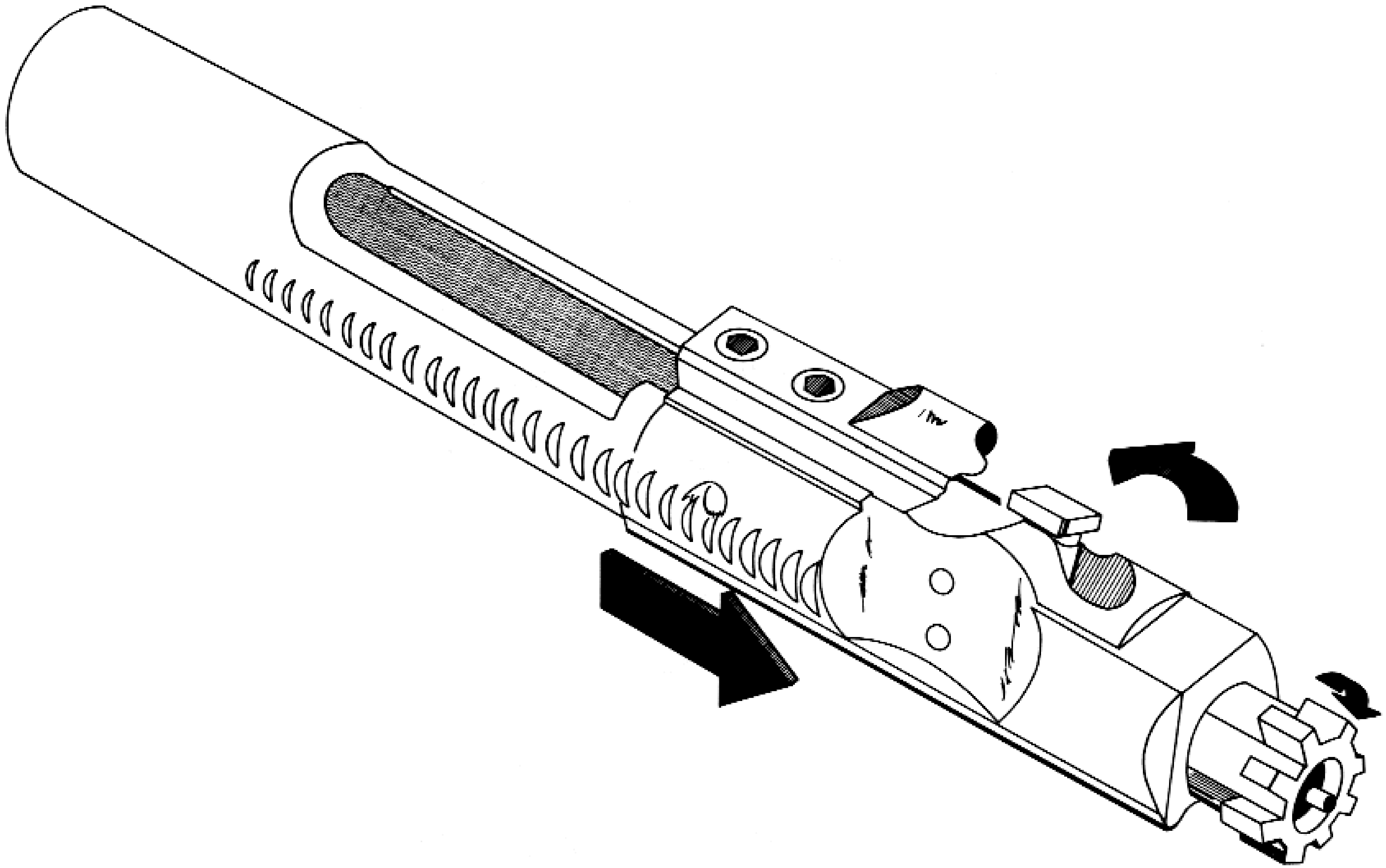
FEEDING



CHAMBERING



LOCKING



STOPPAGES AND IMMEDIATE ACTION

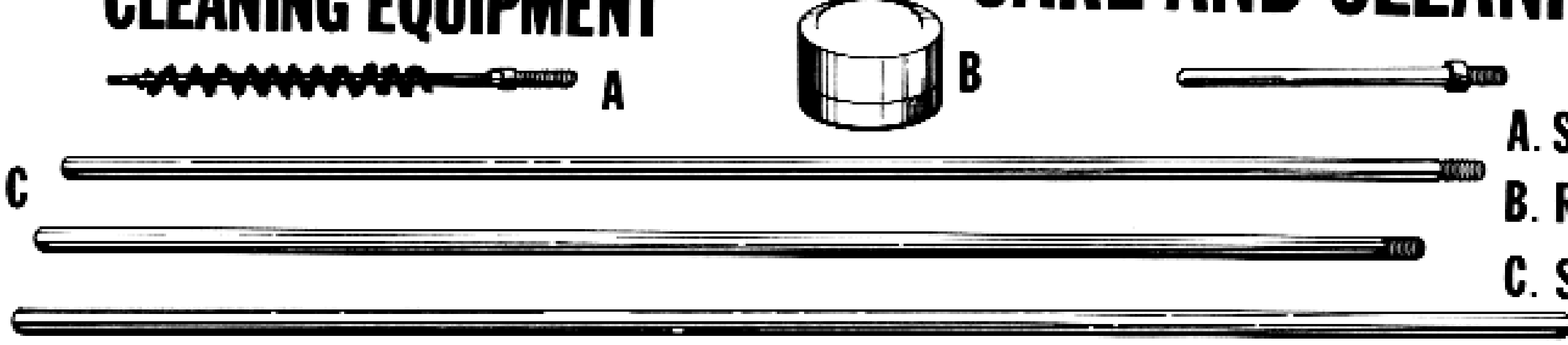
A STOPPAGE IS ANY UNINTENTIONAL INTERRUPTION IN THE CYCLE OF OPERATION. IMMEDIATE ACTION MUST BE TAKEN TO REDUCE THE STOPPAGE.

IMMEDIATE ACTION FOR REDUCING A STOPPAGE WITH THE XM16E1 CONSISTS OF THE FOLLOWING STEPS:

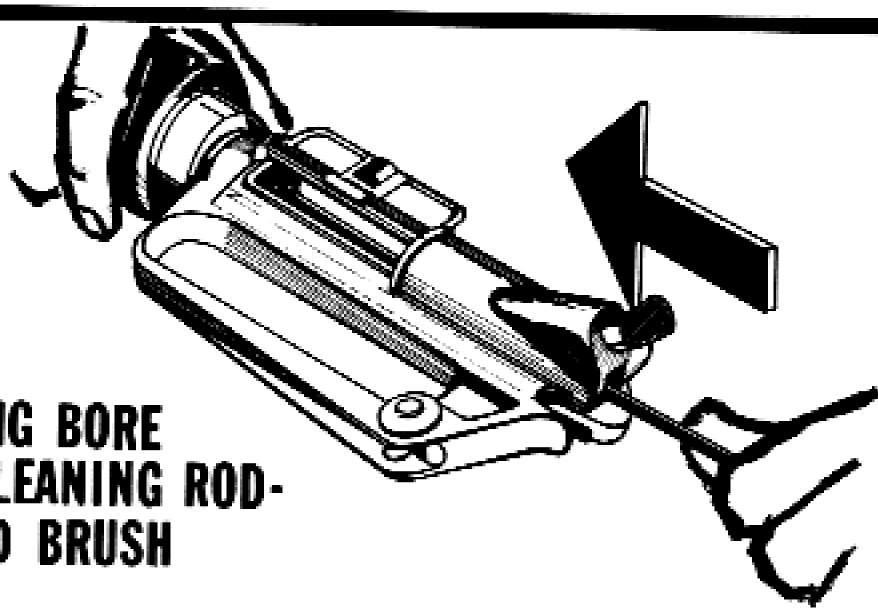
1. PULL THE CHARGING HANDLE TO THE REAR AND RELEASE IT.
2. STRIKE THE FORWARD ASSIST ASSEMBLY TO INSURE THAT THE BOLT IS FULLY SEATED.
3. STRIKE UPWARD ON THE BASE OF THE MAGAZINE TO INSURE IT IS FULLY SEATED.
4. ATTEMPT TO FIRE.

CARE AND CLEANING

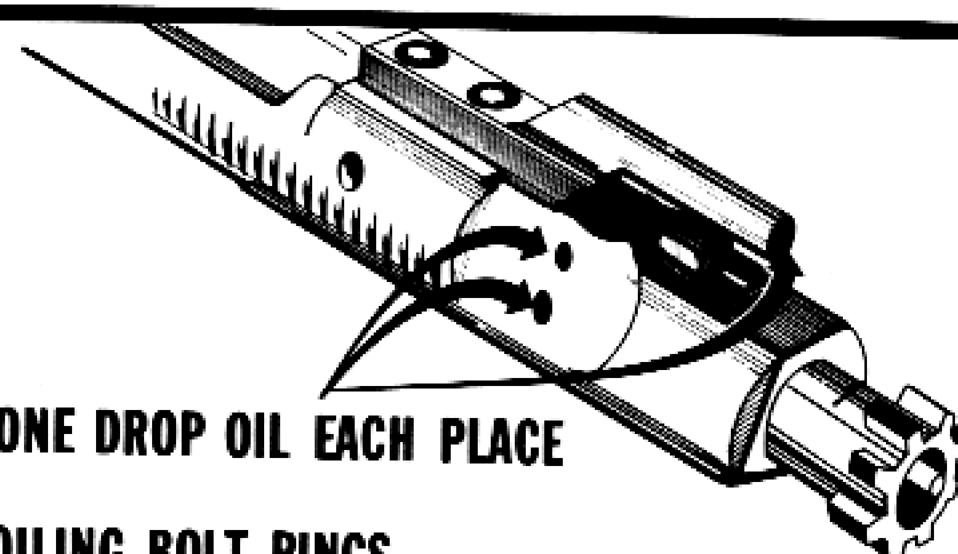
CLEANING EQUIPMENT



A. SMALL ARMS CLEANING BRUSH
B. RIFLE GREASE - 5cc CONTAINER
C. SMALL ARMS CLEANING ROD - (4 SECTIONS)



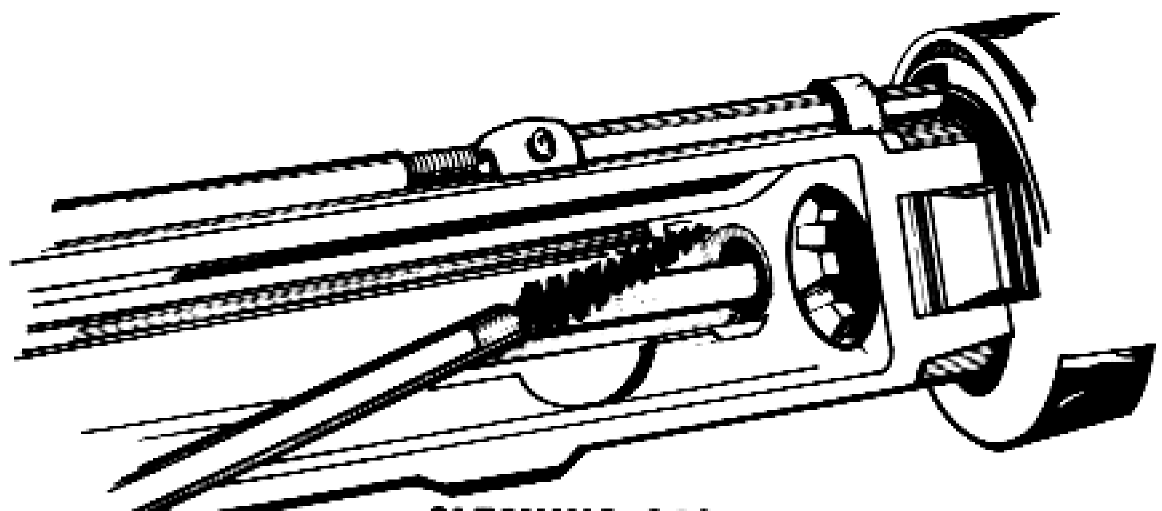
CLEANING BORE WITH CLEANING ROD-M11 AND BRUSH



OILING BOLT RINGS



CLEANING CARRIER KEY



CLEANING GAS TUBE IN RECEIVER